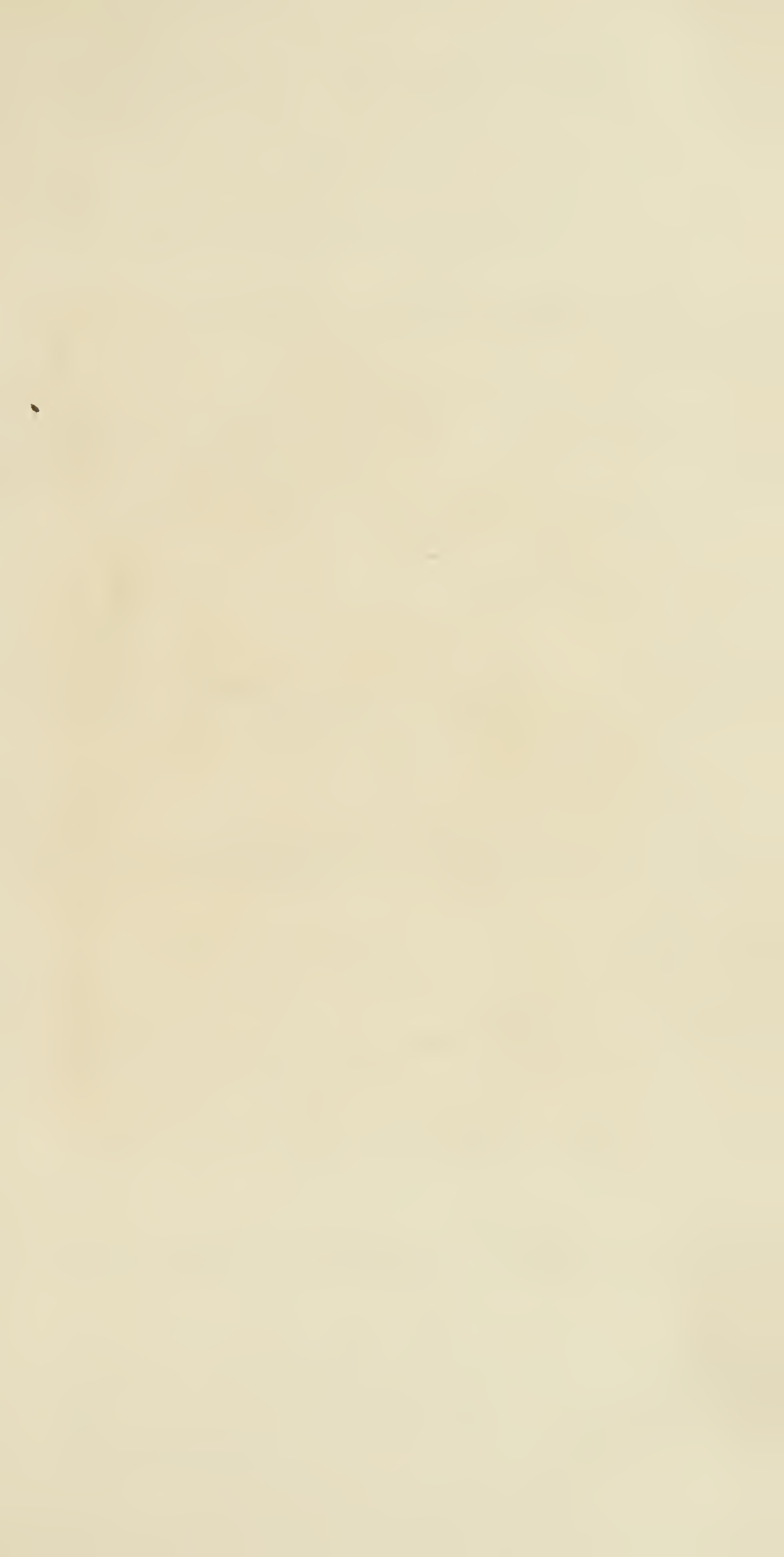






John Duke of Bedford.





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FLORA RUSTICA:

EXHIBITING

ACCURATE FIGURES OF SUCH PLANTS AS ARE
EITHER USEFUL OR INJURIOUS IN

HUSBANDRY.

DRAWN AND ENGRAVED BY

FREDERICK P. NODDER,

BOTANIC PAINTER TO HER MAJESTY,

AND COLOURED UNDER HIS INSPECTION.

WITH

SCIENTIFIC CHARACTERS, POPULAR DESCRIPTIONS,
AND USEFUL OBSERVATIONS,

BY

THOMAS MARTYN, B. D. and F. R. S.

FELLOW OF THE LINNÆAN SOCIETY,

AND

PROFESSOR OF BOTANY IN THE UNIVERSITY OF
CAMBRIDGE.

VOL. I.

L O N D O N :

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1792.

12954



TO THE
K I N G.

SIR,

YOUR Majesty's unexampled encouragement both of the polite and useful arts, must call forth the gratitude of every good subject. That we, in our humble stations, are permitted to dedicate to your Majesty this our little attempt to make the one subservient to the other, is a mark of condescension for which we can never be sufficiently thankful.

Agriculture, the most useful of all the arts, has rarely been so fortunate as to be cherished by Royal patronage and example. But it was reserved for your Majesty to discover and to pursue the road to genuine glory; by encouraging whatever most conduces to render your dominions happy and prosperous.

That your Majesty may long reign the beloved Father of a united people, fully sensible of the many blessings which they enjoy in a superior degree to any

other nation, and untinctured with those levelling principles which have been so destructive to the peace of a neighbouring kingdom, is the earnest wish of those who are,

With unfeigned loyalty,

And zealous attachment,

Your MAJESTY'S

Most devoted servants,

THOMAS MARTYN,

FRED. P. NODDER.

THE PREFACE.

THE slow progress which many useful arts have made even in civilised countries, may, perhaps, be attributed, at least in great measure, to the want of a coalition between Scientific and Practical men. The latter have too frequently despised the former as mere speculatists; whilst men of science have looked superciliously on the simple practitioner. This remark may be applied, too justly, we fear, to the important art of Husbandry. Very few scientific men have heretofore condescended to employ their talents on an employment merely useful, conducted by the mean unlettered peasant: and very few indeed of those to whose lot it has fallen to till the soil, have been acquainted with theory themselves, or have been able even to profit by the theory of others. But happily for mankind, the scene is now changed, and Britain takes the lead in placing the first of arts on a firm basis, in establishing it on rational and philosophic principles. Agriculture cannot fail of becoming a profession as honourable among us as it was among the ancient Romans, since the chief of our nobility and gentry cultivate their own lands on an extensive scale, and it receives the sanction and example of Majesty itself. The Society of Arts also has greatly encouraged improvements in husbandry by their liberal offers of premiums; and an extensive

correspondence has been opened between different provinces of the empire, by means of Mr. Arthur Young's Annals of Agriculture.

Among these great exertions let us hope that our humble attempt to promote and assist the progress of Husbandry will not be overlooked. It is our design to present the Public with such figures and descriptions of those plants with which the husbandman is principally concerned, as may leave no doubt upon his mind what object is intended, when one of them is recommended to him for its utility, or another is pointed out as proper for destruction. Most of the vegetables in common cultivation, must of course be well known; but many even of these are confounded in a multiplicity of local names and corrupted appellations*: whilst the grasses, it must be confessed, are hardly distinguished by any. These being the least known, and yet of the greatest general utility, we purpose gradually to figure and describe the greater part of them, if not the whole; so that whilst the Agriculturist becomes acquainted with their form and qualities, the Botanist may possess a set of figures which he will search for in vain, either united, or scattered in various works.

The encouragement we have received from several respectable societies, as well as from individuals, flatters us that we have met with the approbation of the Public, and will incite us so to proceed, as that we may continue to deserve their patronage.

* Rie-grass and Ray-grass; Saint-foil and Cinquefoil, &c.

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EXPLANATION OF TERMS.

A.

ACUMINATE. Very sharp pointed. Ending in an awl-shaped point. t. 4, 5, 6.

Aggregate, flower. When several small flowers are so combined by the intervention of some part of the fructification, that taking away one of them destroys the uniformity of the whole. This common bond is either the receptacle or the calyx. t. 1, 2, 3.

Approximating. Approaching, or very near to. t. 15.

Awl-shaped (Subulatus). Linear below, but gradually tapering towards the end, like a cobbler's awl.

Awn (Arista). A process from the glume or chaff, in corn and grasses, commonly called the *Beard* in corn. t. 7 & 33.

Awnless. Having no awn.

B.

Banner or Standard (Vexillum). The upper large petal of a papilionaceous or pea-flower. t. 8.

Biennial. Enduring two years, and then perishing.

Bracte, Bractea, or Floral leaf. A leaf different from the other leaves in shape and colour, generally situated on the peduncle, and often so near the corolla as easily to be mistaken for the calyx.

C.

Calyx. The flower-cup, or outer green covering of the flower. t. 8, f. 1.

Ciliate. Guarded on the edge by parallel hairs, resembling the eye-lashes. t. 5.

Compound leaf. Connecting several leaflets on one petiole. t. 1, 2, 3. t. 15. t. 16. t. 28, 29, 30.

Connate. United, cleaving together.

Corolla. The inner covering of the flower, which being commonly larger and more spacious than the other parts, is in common language frequently called the flower.

Creeping stem. Running along the ground, and putting out roots. t. 29.

Culm. The stem of corn and grasses. When dry, called straw, in corn.

Cusp. The point of a lance applied to the calyx. t. 5.

D.

Dichotomous, or forked. Dividing constantly by pairs. t. 24.

Digitate leaf. Compound, having a simple petiole connecting several leaflets, spreading like the fingers when open, and usually five in number. t. 16.

Divaricate, or straddling. Parting from the stalk or branch at an obtuse angle.

E.

Elliptic leaf. A long oval. t. 9.

Emarginate. End-nicked, or notched at the end. t. 19.

F.

Filament. The thread-like part of a stamen, supporting the anther, and connecting it with some other part of the flower.

Flexuose stem. Changing its direction in a curve at every joint. t. 4.

Floscule or Floret. One of the small component flowers of an aggregate flower.

Footstalk. See Petiole.

G.

Germ, Ovary, or Seed-bud. The rudiment of the fruit yet in embryo.

Glaucous. Of a sea-green colour.

Globular or spherical. Round like a globe, sphere, or ball.

Glomerate. Growing close in form of a ball. t. 14.

Glume. The calyx or corolla of corn and grasses, called the *husk* or *chaff*, when dry.

H.

Head. A manner of flowering, in which the flowers are in a close roundish form. t. 1, 2, 3.

Hirsute. Shaggy, rough with hairs.

I.

Imbricate. Lying over each other, like tiles on a roof. t. 6.

Involute. A calyx remote from the flower. t. 3. &c.

K.

Keel (Carina). The lower petal of a papilionaceous corolla, inclosing the stamens and pistil; usually shaped like a boat. t. 8.

L.

Lanceolate leaf. Shaped like the head of a lance. Oblong, and gradually tapering to each extremity. t. 1. t. 8. f. 6.

Leaflet. A diminutive of leaf, and put for the component leaf in compound leaves. t. 15.

Legume or Pod. A membranaceous seed-vessel of one cell and two valves, in which the seeds are fixed alternately along one suture only, as in Pea, &c. In the *Siliqua*, which is also called a pod in English, the seeds are ranged along a partition, dividing it into two cells, and they are fastened to both sutures, as in Stock, Wall-flower, Turnip, &c.

Leguminous Plants. Having a legume or pod for a seed-vessel. t. 8, 15, &c.

Linear. Of the same breadth from end to end. t. 24.

M.

Melliferous. Producing honey, as the nectary.

Monopetalous. Consisting of one petal.

Multifid leaf. Divided into several parts, which have the edges straight, and therefore linear sinuses between them. t. 28.

N.

Nectary or Nectarium. A part of the flower secreting honey. t. 21, 28, 29, 30.

Nerve. A simple unbranched vessel in a leaf, stipule, &c.

O.

Ovate or egg-shaped leaf. Longer than broad, the base the segment of a circle, and narrower at the extremity. t. 8. f. 7.—In the *oval* leaf the curvature is the same at both ends, but the proportion of breadth to length nearly as in the section of an egg.

P.

Panicle. A form or manner of flowering, wherein the flowers or fruits are dispersed on peduncles variously subdivided. t. 7.

Papilionaceous corolla. Butterfly-shaped, consisting of four irregular petals; one called the banner or standard, two wings, and the keel, as in Pea, &c. t. 8, 15.

Peduncle. The flower or fruit-stalk, supporting the fructification only. t. 8. f. 3.

Perennial. Continuing several years.

Petal. The leaf of the corolla. In monopetalous flowers it is the whole corolla; in polypetalous flowers each part is a petal.

Petiole. The leaf-stalk or foot-stalk, connecting the leaf with the branch. t. 1, 2, 3. t. 8. f. 8. t. 19, 21, &c.

Pinnate leaf. A compound leaf, having a simple petiole, connecting two rows of leaflets. t. 15.

Pistil or Pointal. An organ in flowers for the reception of the farina or pollen. It consists of the Germ, Style, and Stigma.

Pollen. The farina, fine meal, or impregnating dust, contained in the anther of flowers.

Procumbent stem or stalk. Lying along the ground, without putting forth roots.

Pubescent. Covered with hairs.

R.

Receptacle. The base connecting the other parts of the fructification.

S.

Scabrous, Rugged. Rough with tubercles or prominent stiffish points.

Serrate. Toothed like a saw.

Serrulate. Having very small teeth.

Sessile. Sitting close: in leaves without any petiole; t. 4, 5, 6, &c. in flowers and fruits, without any peduncle. t. 2, 3, 12.

Sinuate leaves. Having wide openings in the sides. As the Oak. t. 10.

Spatha or Spathe. A kind of calyx, opening or bursting longitudinally, in form of a sheath. As in Arum, Narcissus, &c. t. 1, 3, 13.

Spike. A form or manner of flowering, wherein sessile flowers are placed alternately on a common simple peduncle. As in an ear of wheat, rye, or barley; in many of the grasses, in lavender, &c. t. 4, 5, 6.

Spikelet or Spicule. A partial spike, or subdivision of a spike.

Spinule, dimin. of Spina. A little thorn.

Stamen. An organ in flowers for preparing the farina or pollen. It consists of the filament and anther.

Stigma. The top of the pistil; pubescent and moist, in order to detain and burst the pollen.

Stipula or Stipule. A scale at the base of the nascent petiole or peduncle. t. 8. f. 9. t. 1, 2, 3.

Style. The middle part of the pistil, connecting the stigma with the germ. t. 8. f. 2.

Subcylindric. Almost cylindric.

Subflexuose. Somewhat or slightly flexuose. t. 2.

Subglobular. Almost globular, spherical or round.

Subovate. Nearly or almost ovate.

Subquinquefid. Slightly cloven into five parts.

T.

Tendril or Clasper (Cirrhus). A filiform spiral band, by

which a weak plant supports itself on other bodies, as the Vine, Pea, &c. t. 8. f. 4.

Ternate leaf. Having three leaflets on one petiole: as in the Trefoils. t. 1, 2, 3.

Throat (Faux). The opening of the tube in the corolla, or between the segments of the corolla, where the tube ends.

Trifid. Three-cleft, or cloven into three parts.

Truncate. Cut off at the end in a transverse line; as the leaf of the Tulip-tree.

V.

Valve. The outer covering of a seed-vessel, or the several pieces which compose it—also the leaflets of the calyx and corolla in grasses; and the scales which close the tube in some flowers, as in Borage.

Verticillate plants. Having the flowers growing in a whorl, (Verticillus). t. 25, 26.

Villous. Covered with soft hairs, like the pile of velvet.

Umbel. A kind of receptacle, extending slender proportional peduncles from a common centre, like the sticks of an umbrella. As in Parsley, &c. t. 24.

W.

Wings (Alæ). The two side petals in a papilionaceous corolla or pea-flower. t. 8.

Whorl (Verticillus). A manner of flowering, in which several flowers surround the stem or branch in a ring. t. 25, 26.



TRIFOLIUM ALPESTRE.

Alpine Trefoil.

*DIADELPHIA Decandria.**GENERIC CHARACTER.*

Flowers usually in a head. Legume or pod scarcely longer than the calyx, not opening naturally, but deciduous, or at length falling off entire.

SPECIFIC CHARACTER.

Spikes of flowers close, corollas almost equal, stipules bristle-shaped diverging, leaflets lanceolate, stalks stiff, upright, and undivided,

Lin. spec. 1082. *syst.* 688.—*Jacquin. fl. austr.* 5. t. 433.

Trifolium majus 2. *Clus. hist.* 6. 245.

Tr. montanum purpureum majus C. B. *Raii hist.* 944.

Tr. fol. long. fl. purp. *Riv. tetr.* t. 12.

THIS is readily distinguished by its straight, round, and simple stalk; short, upright petioles or footstalks; narrow leaflets, strongly veined; first spike of flowers sessile; calyx always downy, and of the same colour all over. To these distinctions we may add, that the stipules are marked with

one nerve only, villous, approaching to the stalk, but diverging from each other: the leaflets so finely toothed round the edge as to be hardly visible without a glass; a few short hairs are scattered all round, but at the end there is usually a small bundle or pencil of hairs: sometimes there is only one head of flowers, but more frequently there are two, in which case the second head is not sessile like the first, but stands on a short peduncle or flower-stalk; this also comes out later; each has its floral leaf protecting it when young: the flowers very closely crowded together, and each of them upright; the calyx very villous; of its five teeth, the upper pair is shortest; the lower somewhat longer, and about the same length with the tube; the fifth or odd tooth is twice as long as the others or more; the corolla dark purple, and void of scent; the wings of the same length with the banner, or scarcely shorter, but a very little longer than the keel.

This species is a native of Hungary, Austria, Bohemia, Moravia, Stiria, and Piedmont, growing in dry mountainous woody places. Mr. Dickson has found it abundantly in Scotland.

It is never cultivated, nor can it be recommended for that purpose, since it affords few leaves, and does not branch. This is certainly the true Alpine Trefoil.



TRIFOLIUM MEDIUM.

Huds. angl. edit. 1. 284.

Tr. alpestre. Huds. angl. edit. 2. 326.

Perennial Trefoil, or Clover.

SPECIFIC CHARACTER.

Spike or head of flowers loose, subglobular, villous, sessile; corollas unequal; stipules awl-shaped, diverging; stalks subflexuose, branched, pubescent.

ROOT perennial. The stalks are much smaller, stiffer, and more pubescent than in the following species, and they are not grooved. The petioles or leaf-stalks are very long and pubescent. The leaflets are smaller and much more pubescent than those of *Trifolium pratense*: even the upper surface is as much so as the lower surface of the other, with white hairs closely pressed to the surface. The sheaths are narrower, not pubescent, but ending in much longer points, which are set with long white hairs, standing out. The heads of flowers are more lengthened out than in the *pratense*, having fewer flowers, varying in colour from the palest to full purple. On each side of the head is a small leaf, which is extremely pubescent, and the involucral sheath from

which it rises is very hairy about the edge. The head seems to be more villous than in the following sort, and when young, is extremely so. The tube of the calyx is a greenish white, with purple lines, and ends in five long purplish segments, having many white hairs standing out, disposed as in the next sort; but the first and second pair more different in their lengths. Tube of the corolla white or pale purple; wings much longer than the keel, but much shorter than the banner, which is marked with lines of a deeper purple; this part of the corolla is frequently emarginate both in this and the next species: the keel is purple, but the wings usually white, at least in the middle within.

It is not uncommon in dry pastures.

This seems to be the plant of Mr. Hudson's *flora anglica*, but not the *flexuosum* of Jacquin, of which a plate will be given in a subsequent number.



TRIFOLIUM PRATENSE.

Honeysuckle Trefoil, or Broad Clover.

SPECIFIC CHARACTER.

Spikes of flowers close, corollas unequal, four teeth of the calyx equal, stipules terminating in an awn, stalks not upright, but rising at bottom with a bend.

Lin. spec. 1082. *Mill. dict. n.* 1. *Huds. angl.* 325. *Lightf. scot.* 404. *Wither. bot. arr.* 794. *Fl. dan.* t. 989.

Trifolium Rivin. tetr. t. 11.—vulgare *Blackw. herb.* t. 20.—*pratense purpureum Fuchs. hist.* 817.

THIS species, which is generally well known in Europe, since it has been cultivated in almost every part of it, has a small root striking right down, and scarcely ever creeping, so that the plant, at least in a cultivated state, seldom endures more than two years. The stalk is brownish red in places, grooved, white near the head of flowers, with hairs pressed close to it. Leaflets ovate, blotched with white on the upper surface, covered with hairs pressed close to it on the under, the edge not serrate, but set with hairs. The sheaths very broad, membranaceous with strong ribs. The

heads of flowers globular, with a leaf on each side, rising from a very broad sheath, forming involucre to the head, which, when young, appears villous. The calyx whitish, ending in five long green segments, having a few long white hairs on them standing out; the second pair is very little longer than the upper pair, but the lowest single one is much longer. The tube of the corolla is white; the wings are very little longer than the keel; the banner is longer than the wings.

This valuable plant is found wild throughout Europe, in Siberia, and in North America. In this state we may perhaps hereafter figure it. The present figure was drawn from a cultivated plant raised from Dutch seed. It has been long under culture in Flanders and other countries; and has at length surmounted inveterate prejudice in most parts of these kingdoms. Though it was strongly recommended, and shewn experimentally to be excellent in the sixteenth century, yet at the end of the seventeenth, it was asked, what could be the reason why the great advantage got in Staffordshire and Worcestershire by sowing of clover, can scarce prevail with any in Cheshire and Lancashire to sow an handful upon the same sort of land*. I wish there may be no room to repeat the question, in some parts of the country, at the end of the eighteenth century.

* Houghton's Collections, vol. 4, p. 59.



LOLIUM.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx of one valve or leaf only, fixed or permanent, containing several flowers.

SPECIES.

Lolium perenne. Perennial Darnel.

Lin. spec. 122. *Huds. angl.* 55. *With. arr.* 120.—figured by *Schreber t.* 37. in *Flora Danica t.* 747. *Reliqu. Rudb.* 13. *A. Mor. hist. f.* 8. *t.* 2. *f.* 2. row 2. *Baub. theat.* 127, 128.—*Ger. emac. t.* 78. *f.* 2. copied in *Park. theat.* 1145. 2.—the spike only, by *Leers fl. herborn. t.* 12. *f.* 1.—*Scheuch. agr. t.* 1. *f.* 7. A, B, C.—described in *Ray hist.* 1263. *syn.* 395. *Leers n.* 97. *Pollich. n.* 129, *Hall. helv. n.* 1416.

SPECIFIC CHARACTER.

Spike awnless, spicules or component spikes compressed, longer than the calyx, and composed of several flowers.

DESCRIPTION.

ROOT perennial, creeping. Stalks several from the same root, prostrate or oblique at the base, but the flowering stem upright; from a foot to 18 inches or two feet in height, and

smooth: they have several joints near the base, at a small distance from each other, but on the upper part only one or two; they are frequently red about the knots. Leaves about four inches long, and from two to four lines wide, lengthened out into a point: both they and their sheaths are smooth, except that the upper surface is a little rough to the touch. The flowers are in a spike, from four to six or seven, and even nine inches in length, composed of many spicules or spikelets ranged at a distance from each other, in two rows alternately along the common receptacle, which is flexuose, or changes its direction in a curve line, from one spicule to another: these being each lodged at the base in a hollow of the spike-stalk or receptacle, have no occasion for an inner valve to the calyx for protection, and therefore are not provided with one. The number of flowers in each spicule varies from three or four to six, seven, or eight, and even sometimes nine, ten, and eleven; but six or seven is the most common number. The valve of the calyx tapers to a point. The two inner husks, or valves of the corolla, are of the same length, or nearly so. The germ is placed between the upper of these, and two small lanceolate, white, semi-transparent substances, which Linnæus calls the nectaries. The seed easily quits the chaff.

There are many varieties of this grass, differing in size and colour of the stalk and spike, and number of flowers in each spicule: the flowers are now and then found with awns or beards: the spicules also are sometimes clustered and sometimes branched.

OBSERVATIONS.

This grass has been long well known among our farmers, under the name of *Ray-grass*, or, as they corruptly call it, *Rie-grass*, which is widely different from this. It is also

called *Crap* in some places. Mr. Ray names it *Red Darnel-grafs*. The term *Ray-grafs* is derived from the French *Ivraie*; and this species is by them called *Fausse Ivraie*.

How long this grafs may have been in cultivation, I am not able to ascertain. Neither Gerard (1597), nor his republiſher, Johnſon (1636), nor Parkinson (1640), give the leaſt hint of any uſe to which it is applied. None of the writers on huſbandry in the laſt century, whom I have now before me, as Sir Hugh Plat, Gooſe, Markham, Sir Richard Weſton, Hartlib, Gabriel Plattes, Blith, and Yarranton, ſay a word in its commendation, or inſinuate that any particular ſpecies of grafs was ſown in laying down land.

The firſt mention I find made of it for cultivation, is in Plot's Oxfordſhire, printed in 1677*.—" They have lately ſown (ſays he) *Ray-grafs*, or the *Gramen loliaceum*, by which they improve any cold, ſour, clay-weeping ground, for which it is beſt, but good alſo for drier upland grounds, eſpecially light ſtony, or ſandy land, which is unfit for ſainct foin. It was firſt ſown in the Chiltern parts of Oxfordſhire, and ſince brought nearer Oxford by one Mr. Euſtace, an ingenious huſbandman of Iſlip, who, though at firſt laughed at, has been ſince followed even by thoſe very perſons that ſcorned his experiment; it having precedence of all other graſſes, in that it takes almoſt in all ſorts of poor land, endures the drought of ſummer beſt, and in the ſpring is the earlieſt grafs of any, and cannot at that time be overſtocked, its being kept down making it ſweeter and better beloved by cattle than any other grafs: nay, ſometimes they have been known to leave meadow hay to feed on this: but of all other cattle it is beſt for horſes, it being hard hay; and for ſheep, if unſound, it having been known by experience to have

* Ch. 6. par. 31, 32, 33.

worked good cures on them, and in other respects the best winter grafs that grows.”—Some, he informs us, sow two bushels an acre ; but it is best to sow three, with Non-such.

Ray, in his history, (1688), relates that it is sown in a few places, and that it is excellent for fattening bullocks. In the third volume of the Oxford History of Plants by Morison and Bobart, (1699) it is said, that the seeds are gathered and sown in stiff and moist land ; and that it much esteemed, under the name of *Ray-grass*, as food for sheep and other cattle.

According to Mr. Stillingfleet, “ it makes a most excellent turf on found rich land, where it will remain. Many, he adds, are tempted by the facility of procuring the seed of this grafs to lay down grounds near their houses, where they want to have a fine turf with it ; for which purpose, unless the soil be very rich, a worse grafs cannot be sown, as it will certainly die off in a very few years entirely.” This gentleman thinks that the *Ray-grass* does not feed good venison, and presumes from hence that it is not proper for sheep, having always observed, that the same kind of ground which yields good venison yields also good mutton. If it be the natural produce of very strong or wet lands, this is easily accounted for. In such situations it is not unprolific in leaves ; but in dry upland pastures it runs much to stalks or bents. It is not well adapted to form a lawn, its foliage being of quick growth, and its flowering stems continually shooting forth*.

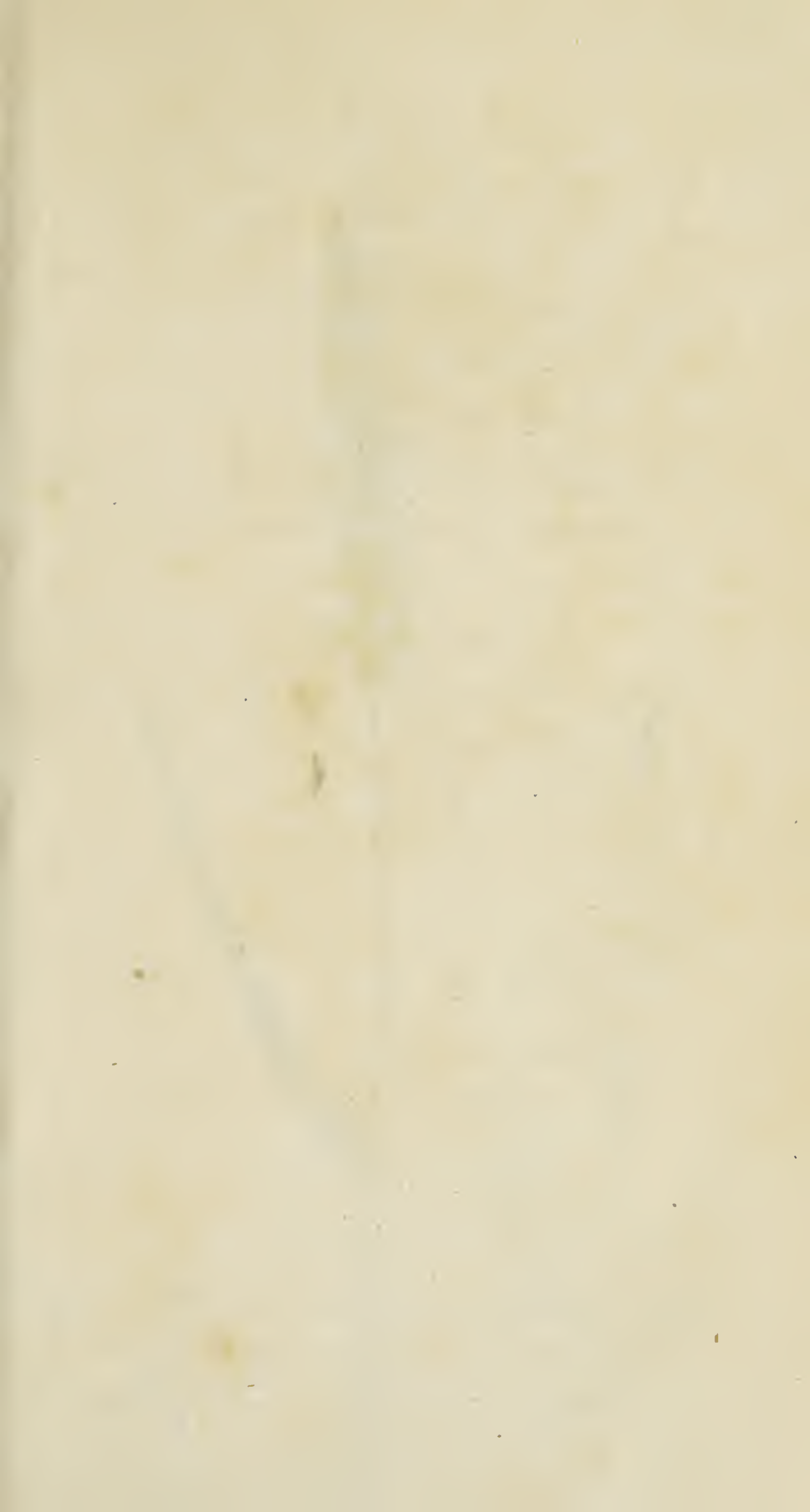
How the *Ray-grass* comes to have been originally selected from all the rest we cannot say : probably it was accident, or perhaps because it is common, and the seeds are easily col-

* Curtis's Practical Observations on the British Grasses, Lond. 3. 1790.—p. 33.

lected. Certainly it is not adapted to all soils and situations equally. Several sorts are even preferable to it: and it is by no means the earliest of the grasses; not only the *Vernal*, but the *Fox-tail*, and the *Meadow-grasses*, all excellent in their kind, appearing earlier than this*.

That the *Ray-grass* should still be the only sort whose seed is to be had in any quantity in the shops, is a disgrace to this age and nation. Mr. Curtis has most laudably endeavoured to remove this opprobrium from us, by saving and distributing seeds of the *Meadow-Fescue*, and other sorts, most likely to be beneficial and productive in laying down meadow and pasture lands of different qualities.

† The same, p. 4, and 65.





PHLEUM.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx of two valves, sessile, linear, truncate, ending in two cusps or points. *Corolla* inclosed.

SPECIES.

Phleum pratense. *Meadow Cat's-tail grass*.

Lin. spec. 87. *Huds. angl.* 25. *With. arr.* 63. *Hall. helv.* n. 1528. *Scop. carn.* n. 74. *Pollich pal.* n. 62. *Krock. files.* n. 102.—figured by *Schreber*, t. 14. f. 1, 2. *Bauh. prodr.* 10. 1. *theat.* 49. 1. *Mor. hist. f.* 8. t. 4. f. 1, 2, *rev.* 3. *Bauh. hist.* 2. 472. 2. *Park. theat.* 1170. 1.—the spike only, *Leers. herborn. t.* 3. f. 1. *Mus. rust.* 5. f. 1.

SPECIFIC CHARACTER.

Spike cylindric, ciliate; culm upright.

DESCRIPTION.

ROOT perennial. Stalks from one foot to two or three feet in height in moist meadows, but in dry soils much lower, upright, round, and smooth. Leaves lanceolate, pointed, rough on the upper surface and along the nerve; sheath streaked, smooth. Spike regularly cylindric and blunt

at the top, sometimes five or six inches long, but usually, at least in its wild state with us, much shorter. At first sight it bears some resemblance to that of the Fox-tail grass; but on examination it will be found very different in form, colour, &c. It is also rough, whereas that is smooth, and the two horns at the truncate end of the calyx in each floccule of the Cat's-tail grass, betray it immediately. The flowers are very close set on the spike.

This grass varies much in size, and in the length of the spike; it has also been observed, in common with several others, to have a leafy spike, occasioned by the seeds germinating in wet weather before they fall; one variety with a bulbous root is set down by many authors for a distinct species; but Mr. Hudson and others assure us that the root becomes fibrous when cultivated in a garden; and at best this is an equivocal character.

OBSERVATIONS.

Meadow Cat's-tail grass was much puffed about twenty-seven years ago, under the name of *Timothy-grass* * It had this quaint name from Mr. Timothy Hanson, who is said first to have brought the seeds of it from New York to Carolina. It had then a great character in North America, where it is called *Herd-Grass*, but whether it has supported it since we cannot say. Its reputation here was short-lived, and deservedly; for it has no one good property in which it is not excelled by the Fox-tail grass; and besides this it is harsh, and late in its appearance. It is proper only for moist lands; in a dry soil it makes a pitiful appearance †.

* Mr. Wych is said to have brought it from Virginia in 1763.

† See *Museum Rusticum*, vol. 1, p. 233.—vol. 2, p. 60, and 160.—vol. 4, p. 181, 301, and 437.—vol. 5, p. 18, 42.—*Curtis's Pract. Obs.* p. 35.

ALOPECURUS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx of two valves. *Corolla* of one valve.

SPECIES.

Alopecurus pratensis. *Meadow Fox-tail Grass.*

Lin. spec. 88. *syst.* 108. *Huds. angl.* 27. *With. arr.* 59.
 Figured by *Curtis, fl. lond.* V. 12. and *præct. obs.*
t. 2. *Schreb. t.* 19. *f.* 1. *Mus. rust.* IV. *t.* 2. *f.* 9.
Stilling. t. 2. *Mor. hist. f.* 8. *t.* 4. *f.* 8. *row.* 2.—
 spike, *Leers herborn. t.* 2. *f.* 4.—Described in
Hall. helv. n. 1539. *Pollich pal. n.* 64. *Leers n.*
 43. *Krock. files. n.* 104. *Ray hist.* 1264. 1. *syn.*
 396. 1. *Scheuch.* 70. *Curtis lond. &c.*

SPECIFIC CHARACTER.

Culm or stem upright; spike cylindric; valves of the calyx hairy and pointed; corolla awned.

DESCRIPTION.

THIS now well-known and deservedly-esteemed Grass, has a perennial root. Stalks from a foot or eighteen inches, to two and even three feet in height, according to the richness

of the foil, round, streaked, smooth, with three or four knots or joints, at each of which is one smooth, broad leaf tapering to a point. Spike an inch and half or two inches in length or longer, soft and hoary. Flowers imbricate, solitary. The single valve of the corolla puts forth a jointed awn near the base, twice its length. The anthers are frequently purple, when in full vigour. The seed is very small, and covered by the glumes or chaffs, from which it does not readily fall.

OBSERVATIONS.

The Meadow Fox-tail Grass is a native of most parts of Europe, from Italy through France, Germany, Holland, Great Britain, to Denmark, Norway, Sweden and Russia: also in Siberia. It is most abundant in moist meadows, where the soil is good: neither very wet nor dry grounds agree with it. Ray affirms that it is extremely common all over England. This does not agree with our experience; for in many counties it is by no means the predominant grass; and in some places it is even scarce. About London, in the best pastures, it is certainly very common. It is one of the earliest of the grasses, producing the spike in April or May, with the Vernal-grass, and the Ladies smock. It frequently flowers twice in one season, and therefore should seem to be proper for such lands as will admit of a second crop being taken.

Meadow Fox-tail Grass undoubtedly possesses the three great requisites of quantity, quality and earliness, in a superior degree to any other; and therefore is highly deserving of cultivation on lands that are proper for it. The seed of this valuable grass may be collected without much difficulty, for it does not quit the chaff, and the spikes are very prolific. It would be superfluous to say more on a subject which Mr. Curtis has handled so copiously. See also the excellent Mr. Stillingfleet's observations on Grasses.



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AVENA.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, containing several flowers; with a writhed or twisted awn from the back of it.

SPECIES.

Avena elatior. Tall Oat grass.

Lin. spec. 117. *Huds. angl.* 53. *With.* 112.—Figured by *Schreber* 25. t. 1. *Curtis lond.* 3. 6. *Fl. dan. t.* 165. *Morison f.* 8. t. 7. f. 38. *Baub. theat.* 18. *Baub. hist.* 2. 456. *Ger. emac.* 23. 1, 2. *Park. theat.* 1176. 1.—Part of the panicle, *Leers herborn. t.* 10. f. 4. *Scheuch. agr. t.* 4. f. 27, 28. *Monti t.* 76.—In *Schreber's* figure, and that of the *Flora Danica*, the root is fibrous.—Described by *Curtis*; *Hall. helv. n.* 1492. *Pollich. pal. n.* 122. *Leers n.* 88. *Krock. files. n.* 177. &c.

SPECIFIC CHARACTER.

Flowers in a panicle, two in each calyx, one perfect, with little or no awn, the other male, with a long twisted awn.

DESCRIPTION.

ROOT perennial, fibrous; in some situations, the upper part of the root, or rather the base of the stalk, becomes

knobby*, as represented in the figure; and in this state it has been given as a distinct species†. Stems from two or three to five feet high, round and smooth, having four or five joints. Leaves six or seven inches, and even a foot in length; about a quarter of an inch in breadth. Panicle from a span to a foot long, consisting of numerous branches unequal in length, directed mostly to one side; when young contracted, spreading when in full flower, afterwards contracting again, and bending a little at top. In general, there is only one awn to each spicule or pair of flowers; but sometimes each flower has an awn, one longer than the other‡.

OBSERVATIONS.

Tall Oat-grass is common on banks, in hedges, on the borders of fields, and sometimes in meadows, especially wet ones: flowering in June and July.

In arable land it is very troublesome from its creeping roots, and is one of those grasses which are confounded under the name of *Quich* or *Couch*.

It is an early grass, very productive, and produces a very plentiful aftermath. It is cultivated abroad, and may be no bad substitute for Meadow Foxtail-grass§. The stem and leaves are by no means coarse, but soft, tender, and of a pleasant taste. It may be propagated with facility.

Some foreign writers have set this down as our *Ray-grass*. That they are very different will immediately appear from comparing the two figures.

* Curtis lond.

† See Royen, Bauh. pin. Ger. emac. &c.

‡ Curtis lond.

§ Curtis Pract. Obs. 22,



LATHYRUS.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Calyx the two upper segments shorter than the other three. (1) *Style* villous on the upper part, broader upwards. (2)

SPECIES.

Lathyrus latifolius. *Broad-leaved Everlasting Pea.*

Lin. spec. 1033. *Huds. angl.* 316. *With.* 772. figured in *Miller's illustr. Fl. dan. t.* 785. *Rivin. tetr. t.* 40. *Mor. hist. f. 2. t. 2. f. 3.* *Garid. prov.* 108, at p. 300.—described in *Miller's dict. n.* 13. *Hall. helv. n.* 433. *Krocker files. n.* 1167. *Bauh. hist. 2.* 303. *Ray hist.* 894. from him, &c.

SPECIFIC CHARACTER.

Each peduncle sustaining several flowers; (3) each tendril (4) furnished with a pair of leaves; (5) the leaves lanceolate, (6) or ovate; (7) membranaceous wings to the stem between the joints. (8)

DESCRIPTION.

ROOT perennial. Stalks several, thick, climbing by means of their tendrils to the height of six or eight feet, or

even higher in woods, where it grows spontaneously: these die to the ground in autumn, and new ones rise in the spring from the same root. Leaves stiff, marked with strong ribs, rolled in at the edge, blunt at the end, but terminating in a little point or bristle; they are always in pairs, and supported by a petiole or leaf-stalk, which is winged: (8) at the base of this are large stipules, or leaf-scales, shaped somewhat like the head of a halbert. (9) The tendrils or clasps are multifid or branched. The peduncles or flower-stalks are eight or nine inches long. Each flower has an awl-shaped bracte or flower-scale at the base of the pedicle or little stalk which immediately supports it. The blossoms are of a pale purplish rose colour. The pods are an inch and an half long, and half an inch or more in breadth. This species is distinguished from the narrow-leaved sort, (*L. sylvestris*) by the superior breadth of the leaves, and by the greater abundance as well as largeness of the flowers.

OBSERVATIONS.

This plant is a native of many parts of Europe, in hedges and woods. It was observed in the Cambridge-shire woods 130 years since by Mr. Ray, and it still continues there. The time of flowering is the end of June, or the beginning of July.

It is a shewy plant for shrubberies, wilderness quarters, arbours, and trellis-work. Bees resort much to it, and the flowers furnish them with abundance of honey. The plants of the leguminous class in general afford a wholesome and palatable food to cattle; and it may be presumed that this, which is so nearly allied both to the pea and the vetch or tare, is not among the worst. It yields a great quantity both of green fodder and seeds; but in what degree cattle

might relish it we cannot say, Any gentleman would deserve well of his country, who would make a course of experiments on the leguminous plants, such as the *Everlasting Peas*, *French Honeysuckle*, the various sorts of *Vetch*, *Trefoil*, *Medick*, &c. which we hope to bring our readers better acquainted with in the course of this work.

SPECIES.

Trifolium Rubens. Long-spiked Trefoil.

Lin. spec. 1081—figured by *Jacquin fl. austr.* 4 t. 385.
described also by him, *p.* 44. *Hall. herb. n.* 375.
Scop. carn. n. 925. *Pollich. pal. n.* 700. *Krocker
files. n.* 1202.

SPECIFIC CHARACTER.

Stalk upright, leaves finely ferrate, spikes long and villous, corollas monopetalous.

DESCRIPTION.

THIS is a large elegant Trefoil. Stalks one or more, simple, upright, strong, round, except that they are a little flattened towards the top, coloured, from a foot to near two feet in length. Leaves oblong, elliptic, or lanceolate, three or four inches in length, not unlike those of *Tr. alpestre*, (t. 1.) naked or void of hairs on both sides, finely ferrate round the edge by means of the veins running out into small curved points directed towards the top, shorter and longer alternately. The stipules, with their sheaths, are very large, in a manner covering the stalk, and are not hairy: the former are sometimes obscurely ferrulate, and the latter, especially the upper ones, are much inflated. There is usually only one spike of flowers to a stalk, but in gardens sometimes there are two. The spike is at first sessile, and concealed within the floral sheaths, with a leaf on each side

of it; but as it advances it becomes pedunculated: it is of an oblong oval or cylindric form, two or three inches in length, upright, and the flowers are very close set. The calyx of each little flower is in reality smooth, but the teeth having long white hairs on them, which spread very much, the whole has the appearance of being hairy: the four upper teeth are very short, but the fifth tooth is as long as the whole corolla, and at least three times as long as the other teeth. The corolla is of a dark red purple, and has a long tube; the banner is ovate and sharp; the wings bluntish, spreading, or rolled back, of the same length with the banner, but of a paler colour; the keel is shorter, and of a darker purple.—Linnæus has marked this Trefoil as annual, but there is no doubt of its being perennial.

OBSERVATIONS.

It is a native of the South of Europe, in woods, and begins to flower in June. As far as we know, it has not been cultivated for cattle; it seems, however, to be of a good quality, and to be sufficiently productive.

Jacquín's figure is drawn from a much taller plant than ours, and more resembles *Tr. Alpestre*. The spike differs much in length, from one inch to four: hence Caspar Bauhin's two species—*spica oblonga rubra*, and *longissima rubente*: *pin.* 328. *n.* 2, 3.



QUERCUS.

MONOECIA Polyandria.

GENERIC CHARACTER.

MALE. *Calyx* subquinquefid. *Corolla* none. *Stamens* five to ten.

FEMALE. *Calyx* one-leafed, quite entire, scabrous. *Cor.* none. *Styles* two to five. *Seed* one, ovate.

SPECIES.

Quercus Robur. Common Oak.

Lin. spec. 1414. *Huds. angl.* 421. *With.* 1083. *Hall. helv. n.* 1626. *Scop. carn. n.* 1184. *Pollich. pal. n.* 909.

SPECIFIC CHARACTER.

Leaves deciduous, smooth, oblong, sinuate; fruit oblong.

VARIETIES.

1. *Qu. pedunculata.* True British or Naval Oak.

Lin. syst. 858. 17. β . *With.* 1084. β . *Mill. dict. n.* 2. Figured here t. 10.—in *Hunter's edit. of Evelyn's silva*, p. 67. *Ger. herb.* 1156. *emac.* 1339. 1. & 1340. 2. *Park. theat.* 1386. 1. & 1390. 1. *Baub. hist.* 1. 70. f. 2. *Lob. ic.* 2. 155. 1. *Fuchs. hist.* 229. *Matth.* 204.—described by *Pollich. n.* 909. See *Ray's hist.* 1385. and 1386. IV.

Q. cum longo pediculo. Bauh. pin. 420.

Leaves sessile, or nearly so; acorns on fruit-stalks, single or two together.

2. *Q. sessilis. Sessile-fruited Oak.*

Huds. angl. β. With. α Mill. dict. n. 1. Hall. β. Ray hist. 1384. I.

Figured here, *t. 11, 12.*—in *Bauh. hist. 1. 70. f. 1.*

Fuchs. hist. 229. the acorn only.

Q. quæ brevi pediculo est. Bauh. pin. 419. Ray. syn. 440. 2.

Leaves petioled or on footstalks; acorns sessile, in clusters.

IT is observed by Mons. Du Hamel, that Oaks in forests being propagated from the acorn, there are so many varieties, that it is difficult to find two resembling each other in every respect*. This is in great measure true, with respect to the shape and size both of the leaves and fruit, and some other subordinate circumstances. He, following Tournefort, sets down the varieties which are to be found in the pinax of Caspar Bauhin, to the number of fourteen, and adds some others from Tournefort's corollary, &c. making twenty-three in the whole: but out of these seven are natives of America or the Levant, and are probably different species. Boerhaave gives only five sorts in his catalogue of the Leyden garden; but it is said that he cultivated there no less than seventy species: if so, this number must have included many distinct species of Oak, as well as many varieties of the common one.

* *Traité d'Arbres. 2. 204.*

Monf. Foucheroux, in an ingenious effay on this fubject, printed in the Memoirs of the French Academy*, remarks, that Oaks commonly ufed for timber may be thus diftinguifhed. 1. *Q. latifolia mas, quæ brevi pediculo eft.* C. B. 2. *Q. cum longo pediculo* C. B.—3. *Q. foliis molli lanugine pubefcentibus,* C. B. called in French *Chêne noir* from the dark colour of the wood, and *Chêne blanc* from the white down on the under furface of the leaves. This he affirms to be the common Oak of England.

He thus describes them.—1. The firft bears abundance of acorns, differing in fize; they are often eaten by infefts, and are therefore probably not fo bitter as fome others. The leaves are large and wide; the finufes circular; the nerves beneath very prominent; the colour deep green within, and a brighter green on the outside; they are fet on a very fhort footftalk. The bark is fmooth and whitifh. The wood white, and eafy to cleave.

Cafpar Bauhin fays that the acorns are of a middling fize; the cup only puftuled with a rough kind of fhagreen; and that they come out three or two together, feldom fingle, at the ends of the twigs. He describes his *Q. latifolia foemina* as being in every refpect fmaller, with the leaves as it were curled from the frequency of the finufes or gashes. The acorns five or fix together, but frequently three or four, feldom two, and very feldom fingle; but often almoft round, imperfekt and continuous with the cup.

2. The fecond has the leaves on a long footftalk, which is narrow, the green is not fo deep, the finufes are more deeply cut. The acorns are of different fizes, and in great quantity, on peduncles of different lengths; they feldom ripen favourably. The bark is brown and rugged. The wood is brown, and it cleaves eafily, becaufe the fibres are ftraight.

* For 1781, p, 49, &c.

According to C. Bauhin, it is peculiar to this species to have one or two acorns hanging down from a long fruit-stalk. The cup is covered on the outside with more succulent protuberancies.

3. The third is more common in certain small portions of woods than in forests of great extent. The sap rises sooner than in the others. The buds appear woolly when they are pushing into leaf in the spring, and it is distinguished principally by the whiteness that appears on the young leaves, whilst the others are of a beautiful green; this whiteness is occasioned by the down on the under surface, and particularly by the little hairs on the midrib: this down disappears as the leaf grows bigger. The leaves never become so thick as in the other sorts, nor of so deep a green: they are long in proportion to the breadth; the sinuses are deep and long, and the footstalk is longer than in the first and second. The acorns are much enveloped in the cup, which commonly falls off with them; and the fruit-stalks are very short. They are in clusters, attached to the twig itself, and at its extremity; their colour is blackish: swine and birds do not seem to be fond of them, probably on account of their bitterness: worms, however, attack them, they are therefore often faulty; and as they ripen early, the gathering of them is uncertain. The wood is of a deep reddish brown, very like that of old Chestnut; the fibres are very much twisted; the rings approach near to each other; the sap-vessels are small and close together, yet distinct and apparent, which is not the case in Chestnut. The specific gravity of the wood is not so great as in some other sorts; probably, therefore, it will not support so great a weight. This is the true *Robur* of the ancients, and deserves to be cultivated in preference to many others, as it unites several



good qualities, and contains more heart in proportion than others. It is not common, because the acorns seldom ripen, and are subject to be eaten by insects : perhaps also because being of slower growth, and not appearing so handsome, it may have been rejected in plantations.

This sort of Oak, according to *Monf. Fougereux*, is what has been taken by builders for Chestnut, in ancient edifices, from its colour, from splitting easily, and insects not attacking it. But it appears that the organization of the vessels in Chestnut is very different from that of Oak ; that the annual increase of the former is about double that of the latter ; and that although the specific gravity of Oak varies in different soils, yet upon the whole it is greater than that of Chestnut. *Monf. Daubenton* also having examined and compared pieces of old timber, which the workmen called Oak and Chestnut, found them both to be Oak of different sorts, varying in specific gravity, but agreeing in colour, grain, and all parts of their organization. They differed from true Chestnut principally in the transverse section having no apparent medullary processes*.

Our first species or variety seems to be the second of *Monf. Fougereux*, and our second to be his first ; the third of *Monf. Fougereux* is probably only an intermediate variety. We have founded our distinction upon two obvious and seemingly permanent characters of the leaf and fruit ; and we have given three exact figures, taken from living specimens of trees which may easily be examined. The first (t. 10.) was drawn from a branch of the genuine British Oak, sent us by *Mr. Nichols*, from the New Forest in Hampshire. The second (t. 11.) from a specimen with which we were favoured by

* *Mem. acad.* 1781. p. 295.

Mr. White, from Norwood in Surry, where it is by no means uncommon. And the third (t. 12.) from a branch which we received from Mr. Nichols out of the New Forest, where it is known by the name of the *Durmaft Oak*.

The Norwood Oak, though it has the essential characters of the *Durmaft*, yet does not recede so far from the true Oak as this; for the leaves bear a greater resemblance to the first than to the third, without, however, having the contours of the sinuations so bold and rounded as in that.

The *Durmaft Oak* differs very widely from the true British species, not only in the essential characteristics of the petioled leaves, and sessile clustered acorns, but in several other remarkable circumstances. The whole tree has much the air of the Chestnut, and is of a freer growth than the true Oak; the bark is of a lighter colour and smoother; the wood not so strong or of so firm a texture; the leaves are rather ferrate than sinuate about the edge, with five, six, or seven sharp indentures on each side; whereas in the common Oak there are only three or four, forming wide sinuses blunt at the end; they are of a yellow green on the upper side, and a pale green on the under; in the specimens, which we received in October, the under surface was of a hoary gray colour, with the ribs inclining to purple; an appearance which the leaves of the common Oak never put on. These, together with the flowers and fruit, are said to appear later in the season than those of the first sort; and the leaves continue longer on the trees, sometimes the whole winter. This Autumn they continued in tolerable vigour, after the leaves were fallen from the common sort. The *Durmaft Oak* grows to as large a size as that, upon similar soils. Of this Mr. Nichols gives an instance in a tree which was felled

in Langley wood, and sent to the dock yard at Portsmouth, containing twenty-three loads of square timber *.

Gentlemen who have an opportunity, will enquire whether the Oak with acorns on short fruit-stalks, said in Ray's Synopsis to have been observed by Mr. Bobart in Bagley wood, and divers other places, and about Newbury to be called the *Bay-Oak*, is the same with the *Durmast Oak* of the New Forest: if so, it might with more propriety be named the *Chestnut-Oak*. It is said in the Synopsis, that the leaves are of a darker green, and less deeply sinuate than the common sort. They will also enquire, whether that which is called in some places the *Fir-Oak*, be the same with this, or in what respects it differs.

There are many varieties of Oak which dealers in timber and woodmen distinguish by their use, qualities, and accidental circumstances; and to which they give different names; but as these are merely local, and not founded on permanent characters, it is difficult to ascertain them. But if it should appear that an Oak of an inferior quality has been widely disseminated; and is perhaps likely to be preferred on account of its freer growth and more promising appearance; it is of great importance to distinguish it, that we may not be imposed upon in future by a specious outside. It was probably for want of this knowledge, as Mr. Nichols observes, that some of the inclosures made in the New Forest at the beginning of this century were planted with acorns taken from the *Durmast Oak*. And it is much to be feared,

* Mr. Nichols is Purveyor of the Navy for Portsmouth dock-yard, and has published "Observations on the propagation and management of Oak-trees in general, but more immediately applying to his Majesty's New-Forest in Hampshire." A treatise that well deserves the attention of the public.

that in weeding or thinning new-made plantations and woods, those young standards which would come to the most valuable timber, are removed to make way for such as are of an inferior quality. Now if it should appear from experience that the characters here delivered are permanent ; and that Oak-trees which bear sessile leaves, with the acorns on fruit-stalks, are of a superior quality as to their timber, to those which have the leaves on foot-stalks with sessile fruits ; then we shall have an easy clue to direct us in our choice of trees for planting : for although it will be many years before the trees will be known by their fruit, yet they may from the first be distinguished by their leaves ; and when planters become better acquainted with them, they will see the difference immediately by their general air and habit.

We recommend it therefore to planters of Oak to observe carefully whether trees raised from the peduncled and sessile acorns respectively preserve the characteristic differences here set down *. For if they are found to do so, they will probably also keep the same difference in the quality of the timber. Enquiry also should be made, whether Mons. Fougereux is right in his assertion, that the common English Oak is that which has a whiteness or woollyness on the young leaves ; or whether that circumstance may not be merely accidental, and that trees of the true sort of Oak with acorns on long fruit-stalks, without this pubescence as well as with it, may be intermixed in our woods and forests, equally excellent for timber. The time for making this observation is the end of April ; the buds usually begin to burst about the middle of the month, or a little later, according to the season and

* We have procured ripe acorns from different Oaks, and have put them into the hands of a gentleman who will make the experiment.



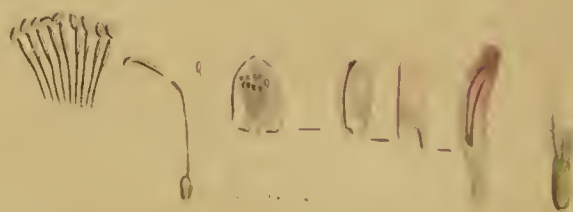
other circumstances, and the leaves are fully expanded the first week in May. The flowers appear earlier, namely, in the first week of April. The male flowers come out from the buds in little bunches hanging down, and about three inches in length ; above these are the female flowers, sitting close in the bud, three or four together, of a red colour ; with some reddish scales at the base of them, which afterwards become the cup of the acorn*.

Mr. Ray, with his usual accuracy, distinguished the Oak with acorns on long fruit-stalks, from that which has the fruit sessile or at least on very short fruit-stalks ; and was of opinion that they are specifically different. He erred in affirming that the former only is found wild in England ; but this error was corrected afterwards in the Synopsis. Mr. Miller, who is of the same opinion with Ray as to the specific difference of these two Oaks, has blundered strangely in making that which has sessile acorns the Common Oak of this country, and in referring us only to the wilds of Kent and Suffex for the other : and this mistake has been copied by Dr. Hunter in his edition of Evelyn's Silva.

The Lucombe Oak, described in the Philosophical Transactions ; and in Hunter's Evelyn from thence, is the *Quercus Cerris* of Linneus, a species totally distinct, and native of the southern parts of Europe.

It is scarcely necessary to observe, that after we have selected the best species or variety of Oak for timber, much will depend upon soil and situation, the age of the tree, the season in which it is felled, and the care which has been taken in training it. When we recommend the culture of a particular sort of Oak, we advert principally to Naval purposes ; for all the sorts or varieties are excellent in their way for different uses.

* See Hunter's figure, and Læfel. fl. prufs. n. 69 at p. 211.



TRIFOLIUM FLEXUOSUM.

Jacqu. austr. 4. t. 386. *Wither. bot. arr.* 795.

Tr. medium. *Lin. suec. edit.* 2. 558.

Tr. alpestre. *Lightf. scot.* 406. *Fl. dan. t.* 662.

Tr. pratense purpureum majus. *Raii hist.* 994.

Tr. purp. maj. fol. longioribus et angustioribus,
flor. faturatioribus. *Raii syn. ed.* 3. 328.

SPECIFIC CHARACTER.

Spikes of flowers loose; corollas almost equal; stipules awl-shaped, converging; stalks flexuose, branched.

DESCRIPTION.

THIS species is at first sight very distinct from those which have been already figured in the three first plates, though it has been confounded with them all. The root is creeping, more woody, and more firmly fixed in the ground, than in *Tr. alpestre* or *pratense*. The stalk is flexuose, angular, and branched. The leaf-stalks are somewhat hairy, but not villous; they are longer than in *alpestre*, and divaricate. The leaflets are broader; most of the parts also are larger, and of a darker colour. The stipules and sheaths are broader, with more frequent veins, usually purple. The heads or spikes are generally peduncled; and in a wild state there is more frequently one than two at the end of each

branch. The calyx is mostly smooth, with larger teeth than in *alpestre*. The corolla is of a paler purple, especially in the wings, and has a sweet scent. It differs evidently from the species figured in the second plate, in the stipules and leaves, in having the heads of flowers larger, more full, not so loose, and rising from the sheath on a peduncle.

OBSERVATIONS.

This species is wild in most parts of Europe, both in chalky and clayey soils; in dry lofty pastures, but especially in hedges, bushy, and woody places, where it has the appearance of being very proper for cultivation. It is affirmed, however*, that in a good loose soil it generally grows more slender, and the spikes become smaller: but since it is very luxuriant on eminences, in a dry, hard, uncultivated clay, it might perhaps succeed in our stubborn hungry clays.

This does not seem to be the *Marl-grass* or *Cow-grass*, which has been strongly recommended for cultivation†.

The three species figured here, and in plates one and three, have been admirably distinguished from each other, and the rest of the clovers, in a most elaborate treatise, by Mr. Afzelius‡.

* By Jacquin and Afzelius.

† See Young's *Annals of Agriculture*, vol. 3. 217.—4. 122.—and 6. 230.—A figure of this will be given as soon as the plant flowers.

‡ See the first volume of the *Transactions of the Linnean Society*.



DACTYLIS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, compressed; the inner valve larger than the outer; both keeled.

SPECIES.

Dactylis glomerata. Rough Cock's-foot grass.

Lin. spec. 105. *Huds. angl.* 43. *Witb. bot. arr.* 94. *Relb. cant. n.* 74. Figured by Schreber, t. 8. f. 2. *Fl. dan. t.* 743. *Mor. hist. f.* 8. t. 6. f. 38. *Bauh. prodr.* 9. f. 1. *theat.* 45. 1. *Mus. rust.* 5. t. 5. *Park. theat.* 1182. 5. *Bauh. hist.* 2. 467. 1. *Barrel. ic.* 26. f. 1, 2. *Leers herborn. t.* 3. f. 3. *Scheuch. agr. t.* 6. f. 15. Described by Pollich. *pal. n.* 98. *Neck. gallob.* 58. *Leers herb. n.* 57. *Krock. files. n.* 148. and by Haller. *n.* 1512, and Scop. *n.* 111. under the name of *Bromus*.

SPECIFIC CHARACTER.

Panicle glomerate, the flowers all directed the same way.

DESCRIPTION.

ROOT perennial. Stalks from two to three feet high, rough towards the top, having three, four, or five smooth,

purplish knots on each. *Leaves* six inches long, or more, and three or four lines broad, somewhat of a sea-green colour, and very rough on both sides with extremely minute prickles. *Panicle* very close, frequently coloured; peduncles alternate, stiff, rough, with a callous tumour at the base of each; spicules almost sessile, having two or three, sometimes four, flowers in each calyx; these are pressed close; during the time of flowering diverge; and, all pointing the same way, serve to explain what Linnæus means by *panicula*, or *spicula secunda*, and *flores secundi*. Calyx pubescent, frequently ciliate, rough; inner valve twice as large as the outer, and awned; equal to the floscules, if there be only two, but shorter if there be more: valves of the corolla rough, edged with white, blunt, with a short awn at the end; in the last floscule this is very short, and sometimes there is none; the inner valve is scarcely shorter than the outer, with the end sharply cloven. Each flower has two very small lanceolate nectaries, much pointed. Filaments twice the length of the corolla; anthers yellow, or purple, turning finally white.

OBSERVATIONS.

Few grasses are more common than this. From its flourishing under the drip of trees it has obtained the name of *Orchard-grass*; and from its roughness and hardness, it is called *Rough-grass* and *Hard-grass*. It flowers from June to August.

This is a very rough, coarse grass, but extremely hardy, productive, and rather early. Its thriving in the shade may be a recommendation; but the head is so large, that in heavy rains it is apt to be laid.





1. *Environ. Biol. Fish.* 1997, 48: 171-180.

CORONILLA.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Calyx two-lipped; the upper lip having two connate teeth; the lower, three smaller ones. *Banner* scarcely longer than the wings. *Legume* contracted between the seeds.

SPECIES.

Coronilla varia. Purple Coronilla.

Lin. spec. 1048. *Hall. helv. n.* 367. *Scop. carn. n.* 913.
Pollich. pal. n. 691. *Riv. tetr. t.* 94. *Park. theat.*
 1088. 3. *fig.* 1089.

SPECIFIC CHARACTER.

Herbaceous; legumes upright, cylindric, swelling, numerous; leaflets very many, smooth.

DESCRIPTION.

ROOT creeping widely, by which this plant increases greatly, and overbears whatever grows near it. *Stalks* five or six feet high when supported; but if not, trailing on the ground; they die every winter, but fresh ones shoot out in the Spring. *Leaves* pinnate; leaflets oblong, small, some in pairs, others alternate, with a single one at the end; the lowest usually approximate to the stem, like stipules, or are

very small. The flowers come out many together in roundish bunches, on peduncles which are about the same length as the leaves: the corollas vary from a deep to a light purple, mixed with white. The legumes or pods are slender, and from two to three inches in length.

OBSERVATIONS.

This handsome plant is a native of France, Germany, Denmark, &c. It flowers all the Summer from June, and frequently till the Autumn frosts stop its career. Almost any soil and situation suit it; but it thrives best in a warm sunny exposure. It was cultivated in the time of Parkinson (1640).

Mr. Miller affirms that it was formerly employed for feeding of cattle. However that may be, it certainly is very productive, and seems to be of a good quality: we recommend it therefore to be tried, among other leguminous plants, for the purpose of procuring abundant and palatable feed for horses, kine, and even sheep.





TRIFOLIUM LUPINASTER.

*Bastard Trefoil, or, Bastard Lupin.**Lin. spec.* 1079. *syst.* 689.Figured in *Gmel. fib.* 4. *t.* 6. *f.* 1.—also in *Buxb. act.* 2. *t.* 20. at p. 346.Described by *Gmelin* at p. 19. *n.* 27. *Amman ruth. n.* 143, 144. and *Buxb. act. petrop.* 2. p. 344. under the name of *Lupinaster*.

SPECIFIC CHARACTER.

The heads of flowers halved ; the leaves quinate or in fives, and sessile ; the legumes or pods containing several seeds.

DESCRIPTION.

THE remarkable circumstance of having more than three leaflets, usually five, to each leaf, is sufficient to distinguish this from the other species of the genus, which has obtained the name of *Trifolium* and *Trefoil* from its ternate leaves. We may observe, however, that the root is perennial: the stalks several, from a foot to eighteen inches in height, round, with several (7, 8) joints, green or purplish ; at each joint is a sheath terminating in a digitate leaf, with the number of leaflets varying from 3 to 6 or 7 ; but the extreme numbers are rare, and 5 is the most common ; the leaves have more resemblance to those of a *Lupin* than of a *Tre-*

foil, and hence the names of *Lupinaster* and *Bastard Lupin*. The leaflets are lanceolate, finely serrate about the edge, and unequal in size. There are usually several heads at the end of the stalk, of a roundish form, with the flowers pretty thickly set; the three lower teeth of the calyx are nearly the length of the keel, the two upper ones are shorter; the banner of the corolla is oblong, near half an inch in length, and purple; the wings are broadish, and pale purple; the keel is pale, and of the same length with the wings. The pod is longer than the calyx, pale brown, and contains 4 or 5 seeds.

OBSERVATIONS.

This species is a native of Siberia, and, as we are informed, in the catalogue of the royal garden at Kew, was first cultivated here in 1763, by Mr. James Gordon. It flowers in July and August.

We have figured this rather on account of its singularity, than from any expectation of its being useful for economical purposes.



PHALARIS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, one-flowered, keeled, valves equal in length, inclosing the corolla.

SPECIES.

Phalaris canariensis. Manured or cultivated Canary-grass.

Lin. spec. 79. *Huds. angl.* 23. *Withering* 65. Figured by *Schreber*, t. 10. f. 2. *Bauh. theat.* 534. *Bauh. hist.* 2. 442. 2. *Ger. t.* 80. f. 1. *emac.* 86. *Park. theat.* 1163. 1. *Mor. hist. f.* 8. t. 3. row. 3. f. 1. Fructification by *Leers* t. 7. f. 3. Described by *Scheuchzer* p. 52. *De Necker gallob.* p. 31. *Krocker fles.* p. 80. *Withering*, &c.

SPECIFIC CHARACTER.

Panicle awnless sub-ovate, in shape of a spike; glumes or chaffs of the calyx boat-shaped entire, with a four-valved corolla; the outer valves lanceolate, smooth, the inner villous.

DESCRIPTION.

ROOT annual. *Stalks* a foot or eighteen inches in height, upright, round, streaked, swelling a little at the joints, and at the lower ones often branching. *Leaves* al-

most half an inch in breadth, of a lively green, with something of a glaucous hue; they are upright, sharp-pointed, roughish about the edge, and have at the base a very thin pellucid membrane, called by some authors *ligula*: the lower part of the upper leaf swells out like a spathe, completely involving and protecting the head of flowers whilst young. This is single, large, an inch or more in length, and has a small linear sheathless leaf at the base of it. The calycine valves are large, and have two green ribs on each side. The parts of fructification are sufficiently described in the specific character.

OBSERVATIONS.

This grass is a native of the Canary Islands, but is now found in a wild state in Britain, Flanders, Hesse, Silesia, France, Italy, and Spain. It is not mentioned as an indigenous plant with us, by any of our old authors; not even in the third edition of Ray's Synopsis (1724): nor have we ever found it except about dunghills, or by road sides, in places where it might have been thrown out among rubbish, or casually dropped by birds. It flowers from June to August.

We believe that the cultivation of this grass is confined to a part of the county of Kent. Mr. Sherard and Mr. Rand observed several fields sown with it near Sandwich*. Mr. Miller informs us, that it is cultivated particularly in the isle of Thanet, where it is esteemed a profitable crop.

It is reputed a slow grower, and therefore liable to be overrun with weeds. The seed is sown at the end of February, or the beginning of March, in drills, twenty to the rod, and six gallons to an acre. Mr. Miller is of opinion, that half this quantity is sufficient. It is usual to manure for this crop, with 50 or 60 cart-loads of dung to the acre†.

* Ray's Synopsis, 394.

† Young's Annals, vol. 4, p. 222.



PHALARIS AQUATICA.

Water Canary-grass.

Lin. spec. 79. *Ait. hort. kew.* 86. *Amæn. Acad.* 4. 264.
 Figured in *Barrel. ic. t.* 700. *f.* 1. *Buxb. cent.* 4,
t. 53.

SPECIFIC CHARACTER.

Panicle awnless cylindric, in shape of a spike, glumes of the calyx boat-shaped, somewhat finely toothed, with a three-valved corolla: the inner valves villous, the outer one minute and awl-shaped.

DESCRIPTION.

ROOT annual. Culm or stalk reedy. From the swelling sheath of the upper leaf issues one smooth spike, or rather panicle of an oblong-ovate shape. The glumes or chaffs are lanceolate, smooth, keeled, and marked with a nerve on each side.

OBSERVATIONS.

It is a native of Egypt, and was introduced (according to the Kew catalogue) by M. Thouin, in 1778. It flowers in June and July. The figures of Barrelier and Buxbaum correspond so ill with our plant, that it may be doubted whether it is the same with theirs.

This species, as far as we know, has not been cultivated for economical purposes.



MEDICAGO.

DIADELPHIA Decandria.

GENERIC CHARACTER

Legume compressed, twisted spirally like a screw.

Keel of the corolla bending down from the standard.

SPECIES.

Medicago lupulina. *Black* or *Hop Medick.* *Blackseed* or *Noneseuch.*

Lin. spec. 1097. *Huds. angl.* 330. *With. bot. arr.* 807.
Curtis lond. 2. 57. *Pollich. pal. n.* 714. *Krock. files. n.* 1223. *Hall. helv. n.* 380. (*Medica*)
Mus. rust. IV. t. 1. f. 4.

Medica lupulina. *Scop. carn. n.* 940.

Trifolium pratense luteum. *Fuchsf. hist.* 819. *capitulum brevius.* *Bauh. pin.* 328.

Tr. luteum lupulinum. *Ger. emac.* 1186. 5.

Tr. montanum lupul. *Park. theat.* 1105. 6.

Melilotus minima: *Rivin. tetr. t.* 8. *Mor. hist. f.* 2.
t. 16. *f.* 8. & *t.* 15. *row. 4. fig. f.*

SPECIFIC CHARACTER.

Spikes of flowers oval; *legumes* kidney-shaped, containing one seed; *stalks* trailing.

DESCRIPTION.

STALKS, unless supported, procumbent, with very numerous alternate branches. *Stipules* oval-lanceolate, with a long awn. *Leaves* on very short footstalks; leaflets oblong wedge-shaped and blunt, ferrate upwards, emarginate, with the midrib lengthened into a point. Flowers yellow, small; calyx slightly downy, nearly as long as the corolla, with five awl-shaped teeth, nearly equal, but the two upper ones rather shortest. The seed-vessels turn black when the seeds are ripe*. They are wrinkled, and somewhat rough with stiff hairs†.

The root penetrates deep into the earth, and is biennial. Stalks somewhat angular, and slightly hairy‡. Flowers from 30 to 40 and upwards in a spike||.

OBSERVATIONS.

This Medick, having ternate leaves, is usually considered as a Trefoil, from which, however, it differs essentially in the fructification. It may be distinguished from *Trifolium agrarium* and *procumbens*, which it most resembles, by the compact oblong shape of the spike, the smallness of the flowers, and the blackness of the seed-vessels. In a wild state it is generally more hairy than these§.

It is cultivated in the Eastern counties, and several other parts of the kingdom, under the names of *Trefoil*, *Black-seed*, and *Noneuch*, both separately, and with Ray-grass, for mowing or sheep-feed. Although inferior, as Linneus observes, to some of this genus, yet it is esteemed very sweet food, particularly for sheep.

It is found frequently wild on dry banks and hilly pastures, flowering in June and July.

* Woodward MSS. † Linneus. ‡ Curtis lond. || Withering.

§ Curtis lond.



CYNOSURUS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, many-flowered. *Proper receptacle* leafy, fixed to one side.

SPECIES.

Cynosurus cæruleus. *Blue Dog's-tail Grass.*

Lin. spec. 106. *syst.* 117. *fl. suec. n.* 89. *Huds. angl.* 59.

Gouan illustr. 4. *Jacqu. miscell.* 2. 66.

Sesleria coerulea. *Scop. carn. n.* 90. *Hall. helv. n.*

1446. *With. bot. arr.* 84. *Arduini animadv. spec.*

2. 18. *t.* 6. *f.* 3, 4, 5.

Gramen glumis variis. *Baub. pin.* 10. *prod.* 21. *f.* 1.

theat. 158. *Scheuch.* 83. *t.* 2. *f.* 9. *A. B. Park.*

theat. 1152. *f.* 6.

Gr. parvum montanum spica crassiore purpuro-cæru-

lea brevi. *Raii syn.* 399.

SPECIFIC CHARACTER.

Bractes entire.—Spike subcylindric.

DESCRIPTION.

ROOT perennial. *Stalks* slender, upright, from 2 to 6 inches and a span in height, surrounded at the base with a

bundle of root leaves inclosed in a brown wrinkled skin; and having three joints, with a very short leaf at each. *Leaves* bluish sea-green, from half an inch to three inches in length, keeled, rough along the edges. *Panicle* resembling a spike, from half an inch to near an inch in length, of an oblong ovate shape, and a reddish purple colour, sometimes brownish white, or entirely white. *Flowers* on short peduncles; leaflets of the involucre roundish, the lower one at the base of the spicule, the other higher up, at the base of the flowers on the opposite side; calyx containing usually two flowers, but sometimes 1 or 3; valves of the corolla equal, bearded on the edges and keel; anthers yellow, except at one end, where they are purple; they are deeply cloven at both ends.

OBSERVATIONS.

This grass is a native of many parts of Europe. With us it is found only in the mountainous pastures of the northern counties. The first notice of it we have is from Mr. Ray, who had it from Mr. Petiver; to whom it was sent out of the north, by Mr. Fitz-Roberts.

It flowers the earliest of all our grasses. This Spring (1792) the spikes were pushing vigorously on the 16th of March, and it was in full flower on the 29th. This is a circumstance that would recommend it for culture, if it answered in other respects; but with us it is of low growth. Foreign authors describe it as being larger than we find it to be.

It differs from the proper species of the genus *Cynosurus*. Scopoli says, that it has the appearance of *Anthoxanthum*, the manner of flowering of *Aira*, and that it approaches to the *Phleums*. Haller thinks it might remain with the *Peas*.



RANUNCULUS.

POLYANDRIA Polygynia.

GENERIC CHARACTER.

Calyx five-leaved [in this species 3, 4 or 5] *Petals* five [in this eight]; with a melliferous pore on the inside of the claws. *Seeds* naked.

SPECIES.

Ranunculus Ficaria. *Pilewort*, or *Lesser Celandine*.

Lin. spec. 774. *fl. suec. n.* 496. *Curtis fl. lond.* 2. 39.

Fl. dan. t. 499. *Scop. carn. n.* 684. *Pollich pal. n.* 529.

Ficaria Hall. helv. n. 1160. *Blackw. t.* 51. *verna.*

Huds. angl. 244. *With. bot. arr.* 579.

Chelidonia rotundifolia minor. *Baub. pin.* 309.

Chelidonium minus. *Fuchsf. hist.* 867. *Ger.* 669. *emac.*

816. *Park. theat.* 617, 3. *Petiv. brit. t.* 38. *f.* 1.

Raii hist. 579. *syn.* 246.

SPECIFIC CHARACTER.

Leaves heart-shaped, angular, placed on footstalks; one flower only on each peduncle.

DESCRIPTION.

THIS common plant is easily distinguished by its roots, formed of many knots or bulbs, shaped like the fig, whence

its name *Ficaria*: by its shining roundish heart-shaped leaves on very long footstalks, more or less notched or scalloped about the edge; by the smoothness of the whole plant; by the calyx of three [sometimes 4 or 5] concave, deciduous leaves, with a small reflex scale under each; by the numerous, yellow, shining, petals, usually eight in number, each having a small scale at the base; and by the very early season at which it flowers. The leaves vary much in form; some are cut very deeply, and others are quite entire; the petals also vary in form, and in number from 7 to 12.

OBSERVATIONS.

Although the Pilewort differs from the Crowfoots in the number of petals, and of leaves in the calyx, yet since it agrees with them in the same general nature and habit, as well as in the nectary or little scale at the base of the petals, it seems to be of the same natural genus.

We observed it flowering this Spring, in its wild state on the 20th of February. It continues to flower through March, and a great part of April. In meadows, pastures, orchards, and by the sides of ditches, it is abundant, especially where it can find either shade or moisture.

Ray has observed, that when the plant begins to decay, which is in the month of May, it puts forth small bulbs, like grains of wheat, from the bosoms of the leaves. Thus the plant readily propagates itself abundantly, and this provision is the more necessary, because the seeds usually prove abortive.

Pilewort closes the petals from about five in the evening to nine in the morning; and in wet weather.

According to Linneus, the young leaves may be eaten in the Spring with other potherbs. Though milder than most of the genus, this, however, retains something of that acrid-

mony which many of the species possess in a high degree. The form of the roots probably recommended this plant as a cure for the piles; and this fancied quality was the origin of the English name.

Linneus remarks, that it choaks other plants which grow near it. Pilewort certainly occupies much room in some meadows, and not being eaten by cattle, should be extirpated. Nothing discourages its increase more than coal or wood ashes, which are both excellent dresses for meadows.





ALOPECURUS AGRESTIS.

Field Fox-tail Grass, or Mouse-tail Grass.

Lin. spec. 89. *Huds. angl.* 27. *With. arr.* 59. *Curtis lond.* 2. 7. *Schreber t.* 19. f. 2. *Fl. dan. t.* 697. *Mor. hist. f.* 8. t. 4. f. 12. *Ger. herb.* 9. 4. *emac.* 11. 2. *Park. theat.* 1169. 8. *Bauh. hist.* 2. 473. 1.—Spike, &c. *Leers herborn. t.* 2, f. 5. *Monti* 51. *Scheuch. t.* 2. f. 6. A. B.—Described in *Hall. belv. n.* 1540. *Pollich pal. n.* 65. *Leers n.* 44. *Krock. files. n.* 105. *Scheuch.* 69. *Curtis lond. &c*

SPECIFIC CHARACTER.

Culm spiked upright; glumes smooth.

DESCRIPTION.

THIS Grass is readily distinguished from the Meadow Fox-tail grass, to which it bears most resemblance, by the great length and slenderness of its spikes, tapering to a point, and usually of a purple colour.

It is marked as perennial by Linneus, Hudson, and in the Kew catalogue; by Leers, Curtis, and others, as annual. The flowering stalk is a foot or 18 inches high, upright, except that it is crooked at bottom; it has 3 or 4 joints, which are smooth, and purple. The leaves are about 3 inches long, and from a sixth to a quarter of an inch broad, roughish on the upper surface only, with a blunt

membrane (ligula) at the base. The sheath investing the young spike has the keel or principal nerve rough. The flowers are loosely imbricate, on very short peduncles. The valves of the calyx have no awn; the single valve of the corolla has an awn proceeding from the base, nearly twice the length of the spicule. Filaments twice the length of the calyx, with anthers, forked at each end. Seed very small, wrapped up in the corolla and calyx. The calyx is surrounded at bottom by a ring*.

OBSERVATIONS.

This grass is a weed in cultivated ground; it is also frequent by way-sides, on banks and the borders of fields, but rarely in pastures.

It varies in the size both of the plant and spike, as well as in the colour of the latter, which is sometimes of a pale green or whitish, without any purple. When in full flower it bends a little. It has acquired the name of Mouse-tail grass in English, and *mysuroides* in Latin, from the great length and slenderness of the spike, resembling the tail of a mouse.

Its inferiority in every respect to Fox-tail grass is so manifest, that it would answer no purpose to make experiments with any hopes of bringing it into cultivation.

It flowers early, continues flowering till Autumn, and comes into bloom remarkably quick after being sown†. This year (1792) it was in full bloom on the 28th of April, long before *Anthoxanthum odoratum*.

* Curtis lond.—From whom and Leers, compared with the plant itself, the above description is chiefly taken.

† Curtis lond.

ANTHOXANTHUM.

DIANDRIA Digynia.

GENERIC CHARACTER.

Calyx a two-valved glume or chaff, containing one flower. *Corolla* a two-valved, pointed glume. *Seed* one.

SPECIES.

Anthoxanthum odoratum. Sweet-scented Vernal Grass.
Lin. spec. 40. *Huds. angl.* 11. *With. arr.* 25. *Curtis lond.* 1. 4. *pract. obs. t.* 1. *Stilling. misc t.* 1. *Mus. rust.* 4. 2. 3. *Mill. illustr. Schreber t.* 5. *Fl. dan. t.* 666. *Baub. hist.* 2. 466. 1. *Mor. hist. f.* 8. *t.* 7. *f.* 25. *Spike, &c. Leers* 2. 1. *With.* 2. 1. *Monti* 57. *ic.* 84.—Described by *Haller*, *n.* 1491. *Scop. carn. n.* 38. *Pollich. pal. n.* 29. *Leers herb. born. n.* 25. *Krock. files. n.* 47. *Scheuchzer* 88. *Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Spike oblong, ovate; *floscules* longer than the awn, on short peduncles.

DESCRIPTION.

THIS may be easily distinguished from all other grasses, by the circumstance of each flower having two stamens only; by one valve of the calyx being small, the other large and including the whole fructification; the valves of the corolla

very hairy, each having an awn, that from the outer valve straight, shorter than the calyx, from the middle of the back, or near the top ; that on the inner valve springing from the base or near it, at first straight, and a little longer than the calyx ; but as the seed ripens, the top generally bent horizontally inward ; the nectary composed of two little ovate shining valves, of different sizes, closely embracing the germ, and scarcely to be discovered, unless when the anthers are protruding from between them ; for as soon as they are excluded, they close again on the germ, and form a coat to the seed.

The root is perennial ; the stalks are from eight inches to a foot and upwards in height, having two or three joints on each. Root-leaves downy on their upper surface. Stem-leaves a little rough on both sides, with a blunt membrane at the base finely notched ; the sheath streaked and smooth ; the lower one somewhat villous, and often reddish*.

OBSERVATIONS.

The usual colour of the spike is a pale yellow, whence its generic name *Anthoxanthum*. From the sweetness both of the flowers and leaves, which it imparts to new-mown hay, it has derived its specific or trivial name *odoratum*, or *sweet-scented*. From the earliness of its flowering, the beginning or middle of May, it has acquired its other English name of *Vernal* or *Spring-grass*.

It grows on almost any kind of soil, but seems to prefer that which is moderately dry. In a rich soil the leaves have a great tendency to curl. It is common in meadows and pastures ; and also in woods, where the spikes are usually slender and loose. The seed is ripe about the middle of

* Curtis and Leers.

June, and may easily be separated by rubbing; this grass, however, is not very abundant in seed.

Mr. Stillingfleet remarks, that from its being found on such pastures as sheep are fond of, and from whence excellent mutton comes, it is most likely to be a good grass for sheep pastures. That he has found it on all grounds, from the most sandy and dry to the most stiff and moist, and even in bogs. That it is very plentiful in the best meadows about London, as about Hampstead and Hendon; and that it is very easy to gather.

Mr. Curtis recommends it for its earliness, its readiness to grow in any soil or situation, and for its agreeable scent. He thinks it may be cultivated to considerable advantage, as it forms a thick tuft of leaves at bottom, though in point of crop it is not so productive as some other Grasses.



VALERIANA.

TRIANDRIA Monogynia.

GENERIC CHARACTER.

Calyx none. *Corolla* above the germ, monopetalous, swelling at the base on one side. *Seed* one.

SPECIES.

Valeriana Locusta. *Corn-salad*, or *Lamb's Lettuce*.

Lin. spec. 47. *fl. suec. n.* 36. *Huds. angl.* 13. *With. arr.* 37. *Curt. lond.* 5. 4. *Fl. dan. t.* 738. *Riv. mon. t.* 6. *f.* 2. *Mor. hist. f.* 7. *t.* 16. *f.* 36, 37. *Ger. herb.* 242. *emac.* 310. *f.* 1, 2. *Park. theat.* 812. 3. *Baub. hist.* 3. 323. *f.* 2. & 324.—Described by *Haller n.* 214. *Pollich. pal. n.* 32, 33. *Krock. files. n.* 51. *Relhan. cant. n.* 26. *Curt. &c.*

SPECIFIC CHARACTER.

Flowers with three stamens; *stalks* dichotomous; *leaves* linear.

DESCRIPTION.

ROOT annual. Stalk from four inches to a span and even a foot more in height. Bottom leaves many, entire or very slightly toothed; those on the stalk are in pairs at each subdivision, sessile or embracing the stalk in part, they are usually more toothed than the lower leaves, and both these and the

stalk are fringed at the edges with fine white hairs. The flowers are collected into a close little umbel or corymb, protected by an involucre. The corolla is minute, and of a very pale blue colour.

OBSERVATIONS.

No natural genus is subject to more variations, or more effectually mocks the efforts of artificial arrangement, than the Valerian. This species also admits very considerable varieties in the form and indentures of the leaves, in the fruit, &c.—It is distinguished from the Valerian properly so called, by having the seeds naked or without any down or feather (pappus).

Early in the Spring, and even during the greatest part of a mild Winter, this little plant will furnish a good material for salads. It is common in corn fields, and appears about the time when lambs are dropped. From these circumstances it has obtained the common English names. Without being at the trouble of cultivating it, the peasant may find it abundantly in the month of April on the warm banks of fields, pastures, and lanes. Towards the end of this month, or early in May, it begins to flower. In corn fields it is usually very small and low.

Gerard, who says it may be called from the Dutch *White Pot-herb*, informs us, that since it hath grown in use among the French and Dutch strangers in England, it hath been sown in gardens as a salad herb.



LAMIUM.

DIDYNAMIA Gymnospermia.

Nat. Order of *Verticillatæ*.

GENERIC CHARACTER.

Corolla having the upper lip vaulted or arched; the lower lip two-lobed; and the throat toothed on each side.

SPECIES.

Lamium purpureum. *Red Dead-Nettle* or *Archangel*.
Lin. spec. 809. *Huds. angl.* 255. *With. arr.* 605. Fi-
 gured by *Curtis lond.* 1. t. 42. *Fl. dan.* t. 523.
Berg. phyt. 119. *Riv. mon.* t. 62. f. 2. *Ger. herb.*
 568. 4. *emac.* 703. 3. *Park. theat.* 605. 1. & 587.
 11. *Mor. hist. f.* 11. t. 11. f. 9. Described by *Hal-*
ler, helv. n. 272. *Scop. carn. n.* 701. *Pollich. pal.*
n. 556. *Krock. files. n.* 929. *Raii hist.* 559.
Curtis, &c. -

SPECIFIC CHARACTER.

Leaves heart-shaped, blunt, petioled or on foot-
 stalks.

DESCRIPTION.

ROOT annual. Stalks weak, bending, branched to-
 wards the bottom, naked for a considerable space near the

top, six inches high, and upwards. Leaves veiny, downy with hairs, but not rough, the lowermost smaller, and on longer petioles, the uppermost growing thick together; both these and the stalks are frequently tinged with red. Flowers close together, and many in a whorl, chiefly between the upper leaves. Corolla purple, with the under lip usually spotted: there are two teeth on each side of the throat or entrance into the tube, the upper ones long and pointed; the lower blunt, with a spot on them.

VARIETIES.

The corolla varies in colour, from a full bright red, to a very pale purple, and even white. The colour is usually red in a dry soil and open exposure; and pale when the plant grows in the shade.

The leaves vary much in size, but particularly in the indentures about the edge. Ray and others have remarked them to be sometimes so deeply cut, as to be in a manner lobed. On the contrary, I have a specimen in which the leaves have no indentures whatsoever about their edges.

OBSERVATIONS.

It is a common weed in kitchen gardens and corn-fields, under hedges, &c. flowering very early, and a great part of the year.

As a medical plant it is disused; nor is it ever, as we believe, eaten among us as a pot-herb, whatever they may do in Upland, a province of Sweden.

It would be impertinent to mention the squareness of the stalks, the regular opposition of the leaves, the manner of the flowers growing in whorls, and the four naked seeds at the bottom of the calyx, which serves them for a capsule: for these circumstances form no part of the specific character, being common not only to all the *Lamiums*, but to *Verticillate* plants in general.



SPECIES.

Lamium album. *White Dead-Nettle* or *Archangel*.

Lin. spec. 809. *Huds. angl.* 255. *With. arr.* 604. Figured by *Curtis, lond.* 2. 45. *Fl. dan. t.* 594. *Berg. phyt.* 161. *Rivin. mon. t.* 62. f. 1, *Ger. herb.* 566. *emac.* 702. 1. *Park. theat.* 605. 3.— Described by *Hall. helv. n.* 271. *Scop. carn. n.* 271. *Pollich. pal. n.* 555. *Krock. files. n.* 928. *Raii hist.* 559. *Curtis, &c.*

SPECIFIC CHARACTER.

Leaves heart-shaped, acuminate, ferrate, petioled.
Flowers about 20 in a whorl.

DESCRIPTION.

ROOT perennial, creeping. Stalks upright, unbranched, slightly hairy, sometimes almost smooth, and in exposed situations reddish purple, about a foot in height. Leaves resembling those of the great stinging nettle, hairy on both sides; the lower on longer petioles than the upper ones, and not so much pointed: those next the root frequently small, and almost round. Flowers from 10 to 20 in a whorl, much larger than in the foregoing sort, yellowish white, sometimes slightly tinged with red; upper lip hairy; two small teeth on each side of the throat; calyx sessile, ribbed, with a dark purple spot at the base, and a short linear bracte. Anthers

hairy, dark purple. Ray observes, that with their dark edges they represent in some degree the form of the fig. 8.

OBSERVATIONS.

This is found wild in hedges, among bushes and rubbish ; and in corn-fields very common. It flowers in April, May, and June.

It is little used as a medical herb ; but it is much resorted to by bees. The honey, as Mr. Curtis remarks, being secreted abundantly into the bottom of the tube of the flower, by a little gland surrounding the base of the germ. This, as well as the other sort, has a disagreeable smell when bruised.

Having a strong, creeping, perennial root, and being disliked by cattle, it should be extirpated by the farmer*.

* Curtis lond.



NARDUS.

TRIANDRIA Monogynia.

GENERIC CHARACTER.

Calyx none. *Corolla* two-valved.

SPECIES.

Nardus stricta. Mat-grass, or small Matweed.

Lin. spec. 77. *Huds. angl.* 22. *With. arr.* 54. Figured by *Schreber*, 65. t. 7. *Bauh. theat.* 70. *Bauh. hist.* 2. 513. 2. *Mor. hist. f.* 8. t. 7. f. 8. *Lob. ic.* 90. 1. *Ger. emac.* 1631. 3. *Park. theat.* 1199. 5, 6, 7. Spike, &c. *Leers herborn. t.* 1. f. 7.—*With. t.* 2. f. 6. *Scheuch. t.* 2. f. 10. *Monti* 31.—Described by *Haller, helv. n.* 1410. *Scop. carn. n.* 67. *Pollich. pal. n.* 53. *Leers n.* 38. *Krock. files. n.* 83. *Raii hist.* 1260. 8. *syn.* 393. 2.

SPECIFIC CHARACTER.

Spike setaceous or bristle-shaped, straight, all the florets pointing one way (*secunda*)

DESCRIPTION.

ROOT perennial. Culms from a span to a foot in height, slender, stiff, roughish, having one, two, or three

joints near the base, with a short leaf to each, and thence naked to the spike. Root-leaves numerous, longer, narrow, a little rough. Spike two or three inches long, consisting of about 20 spicules dispersed thinly along it. Florets yellowish white, or purple, pubescent, alternate, sessile. Spike-stalk (rachis) convex on one side, hollowed on the other, with rough alternate teeth on the edges for the insertion of the florets, and continued above them to a short bristly point.

OBSERVATIONS.

This grass is easily distinguished by the flowers having one style only; so that although it be in the same class with most of the grasses, it is in a different order, and ranges rather with the *Calamariæ*, such as the *Schoenus* or Rush-grass, the *Scirpus* or Club-grass, &c.—By the slenderness and rushy stiffness of the stalks and leaves; and by the florets being thinly dispersed along the spike, mostly in pairs, and pointing in one direction.

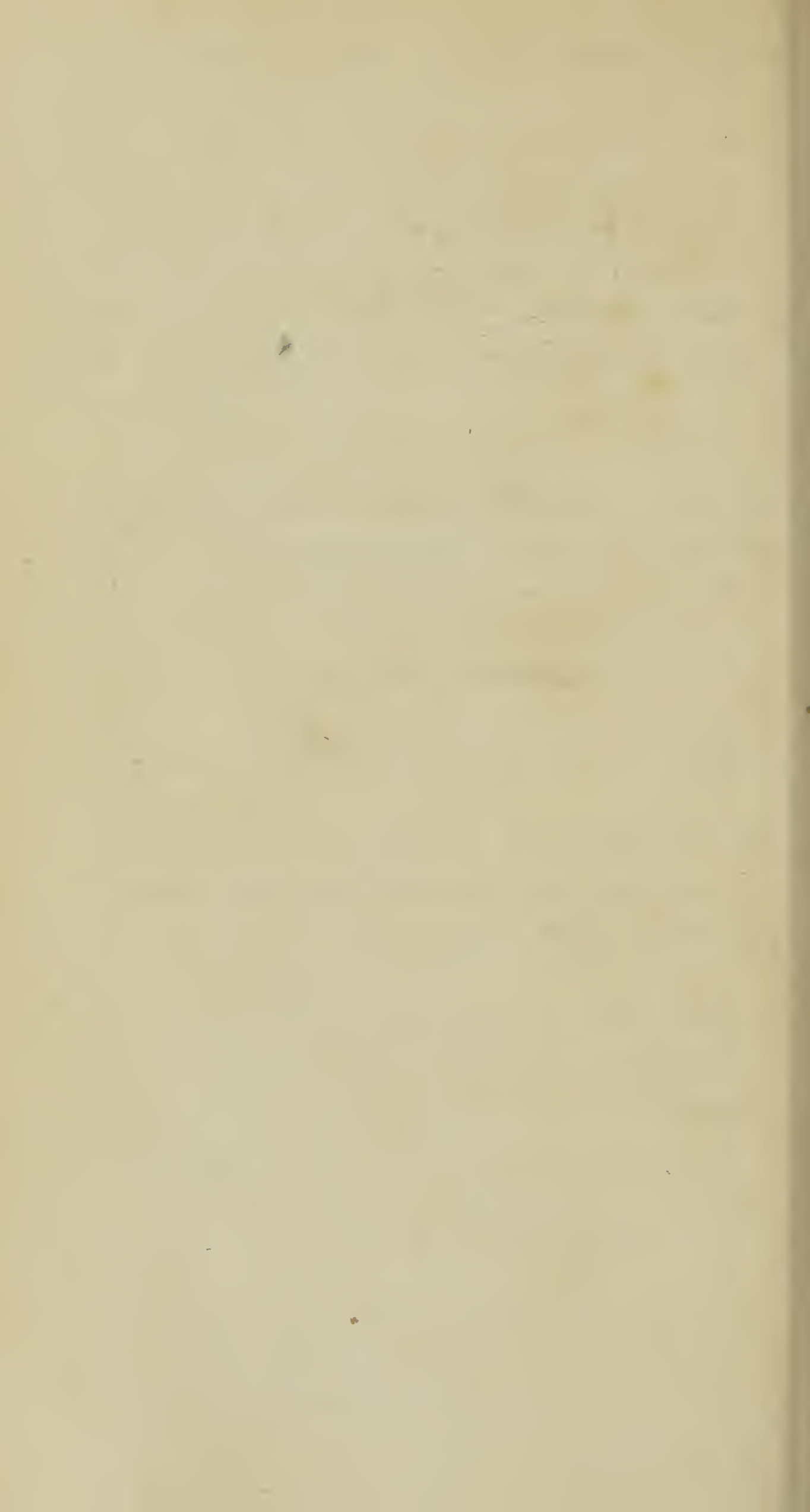
It flowers from May or June to August; Ray says from the end of April, and that it holds its spike till Winter.

In woody, moist, barren meadows; with us chiefly on or about bogs on heaths.

This grass being stiff, hard, and short, Linneus observes that it eludes the stroke of the scythe, or takes off its edge, for which reason it is disliked by the mowers. In England it rarely comes under the scythe.

Linneus also informs us that crows frequently stock it up, for the sake of the larvæ of some *Tipula*, which they find at the root.

He says that goats and horses eat it; but that cows and sheep are not fond of it. With us we do not know that it is put to any use whatever.







RANUNCULUS.

POLYANDRIA Polygynia.

GENERIC CHARACTER.

Calyx five-leaved. *Petals* five, with a honied pore at the claw of each within. *Seeds* naked.

SPECIES.

Ranunculus bulbosus. *Bulbous Crowfoot.*

Lin. spec. 778. *Huds. angl.* 241. *With. arr.* 574. *Lightf. scot.* 292—Figured by *Curtis, lond.* 1. 38—*Mill. illustr. Fl. dan. t.* 551. *Krock. files. 2. t.* 21. *Ger. herb.* 806. 6. *emac.* 953. 6. *Park. theat.* 329. 5. *Petiv. brit. t.* 38. *f.* 4.—Described by *Hall. helv. n.* 1174. *Scop. carn. n.* 692. *Pollich. pal. n.* 533. *Leers herborn. n.* 425. *Krock. n.* 881. *Raii hist.* 581. 2. *Curtis, &c.*

SPECIFIC CHARACTER.

Calyxes turned back; *peduncles* grooved; *stalk* erect, bearing many flowers; *leaves* compound.

DESCRIPTION.

ROOT bulbous, like a small turnip; the new bulb formed above that of the last year. *Stalks* a foot high, round, hairy,

branched towards the top. The bottom leaves are on long hairy footstalks, very wide, and embracing the stalk at their base, branching into three parts at top, and spreading out into three leaflets, each usually subdivided into three lobes which are gashed and toothed; they are hairy on both sides, and pale underneath; the middle leaflet is on a much longer footstalk than the others. The leaves on the stalk are sessile or nearly so, deeply divided into numerous segments, much narrower than the others, divided and subdivided into threes: the uppermost multifid, linear, with very few teeth, and sometimes only digitate. Calyx hairy; stamens about 60; germs from 30 to 40.

Ray observes very justly, that this species differs from the creeping Crowfoot, not only in the root, but in having more upright stalks that never creep; the leaves towards the top of the stalks cut into longer narrower segments; the leaves of the calyx, after the flower opens, turned back to the peduncle; the heads of seeds a little more produced, and each seed not terminating in a spinule, as the creeping sort does: finally, it flowers a little earlier. We may add, that it is easily distinguished from the upright Crowfoot by its furrowed or grooved peduncles.

OBSERVATIONS.

The formation of the bulb is a clear proof, that the notion of Haller, Linneus, and some others, of the creeping Crowfoot being only an autumnal variety of this, is without foundation. No remains of creeping roots are to be found in the Spring, when the old and new bulbs are found together; and in a turf which was taken up, with five or six roots in it, they were all entirely distinct, and had each the old and new bulb together*.

It flowers in April and May, and abounds in dry pastures.

It inflames and blisters the skin, and beggars are said to use it for that purpose to excite compassion by artificial sores.

The juice is even more acrid than that of *Ranunculus sceleratus*. The roots are said to lose their acrimony on being kept, and to be even eatable when boiled. Hogs are certainly very fond of them.

* Woodward, MS.



SPECIES.

Ranunculus repens. *Creeping Crowfoot.*

Lin. spec. 779. *Huds. angl.* 240. *With. arr.* 575. *Lightf. scot.* 292. Figured by *Curtis lond.* 4. 38. *Fl. dan. t.* 795. *Blackw. herb. t.* 31. *f.* 1. *Ger.* 804. 1. *emac.* 951. 1. *Petiv. brit. t.* 38. *f.* 7, 8. *Mor. hist. f.* 4. *t.* 28. *f.* 18. Described by *Haller, helv. n.* 1173. *Scop. carn. n.* 689. *Pollich. pal. n.* 534. *Krock. files. n.* 882. *Raii hist.* 581. 1. *Curtis, &c.*

SPECIFIC CHARACTER.

Calyxes spreading, peduncles grooved, suckers creeping, leaves compound.

DESCRIPTION.

ROOT perennial, consisting of numerous whitish fibres; these are thrown out at every joint of the stalk, as it creeps along the ground. The whole plant tinged with brownish purple, and hairy, particularly the membranes at the base of the petioles, which are semicylindric, rounded underneath, but flat and channelled above. The leaves are generally hairy on both sides, especially underneath; the upper surface is often clouded with white; the first and lower leaves are composed of three leaflets, each on a petiole, the middle one longest, cut deeply into three lobes, which are sharply notched: the rest are only three-lobed, except the uppermost next the flowers, which are only trifid, and sometimes even sim-

ple; these are linear. Flowering-stalks upright, angular, supporting two flowers, sometimes only one, on a deeply-furrowed peduncle. Calyx hairy, coloured yellowish and purple. Corolla very shining, of a deeper yellow than the upright Crowfoot. Stamens from thirty to forty or fifty. Germs about forty.

OBSERVATIONS.

This sort flourishes in almost any soil or situation, and therefore varies extremely in size and appearance. Though commonly covered with hairs, which on the stalks and upper surface of the leaves are pressed close, yet sometimes it is smooth.

Linneus observes that the flowers close during rain, but do not hang down.

It flowers in June, and continues flowering the rest of the Summer.

It has less of the acrid quality which is found in most of the genus, and is said to be eaten as a pot-herb. Cattle, however, do not feed on it willingly, and yet in many grass fields it makes a considerable part of the pasturage.



SPECIES.

Ranunculus acris. Upright Crowfoot.

Lin. spec. 779. *Huds. angl.* 241. *With. arr.* 576. *Lightf. scot.* 293.—Figured by *Curtis, lond.* 1. 39. *Blackw. t.* 31. *f.* 2. *Bauh. hist.* 3. 416. *Ger.* 804. 2. *emac.* 951. 2. *Park. theat.* 328. 2. *Petiv. brit. t.* 38. *f.* 3. *Mor. hist. f.* 4. *t.* 28. *f.* 16.—Described by *Haller, helv. n.* 1169. *Scop. carn. n.* 690. *Pollich. pal. n.* 536. *Krock. files. n.* 884. *Raii hist.* 583. 7. *Curtis, &c.*

SPECIFIC CHARACTER.

Calyxes spreading; *peduncles* round; *leaves* three-parted with many clefts; the upper ones linear.

DESCRIPTION.

ROOT perennial, consisting of numerous whitish fibres. Stalk two feet high, upright, round, somewhat hairy; the hairs pressed close. Root-leaves on long, upright, hairy petioles; the middle lobe trifid, the side ones two-lobed, all sharply toothed; slightly hirsute; the upper surface, particularly at the base, frequently of a purple colour. The leaves on the stalk are of the same structure, but divided into narrower segments, and placed on shorter petioles. The uppermost are sessile and linear. Calyx yellow and hairy. Flowers many, one or two together. Stamens from forty eight to ninety three. Germs up to fifty six or fifty nine.

This species has the trivial name of *acris*, from its acrimony, in which it exceeds most of the kind. It loses this property when made into hay, but is then too hard to afford much nourishment. It is evident that cattle dislike it in a fresh state, for we see pastures that are fed very bare of grafs, in a manner covered with it. If they chance to eat it, their mouths become sore and blistered. It flowers in June and July, in most meadows, especially moist ones.

These three Crowfoots are confounded by persons ignorant of Botany, under the names of Butter-flowers, Butter-cups, King-cups, Gold-cups, and Gold-knops; they are however easily distinguished, the first by its bulbous root, and its calyxes turned back; the second by its creeping stalk; the third by its tall, genteel, upright growth, and its round peduncles, without any grooves; the *repens* and *acris* have the calyxes spreading; the *bulbosus* and *repens* have the peduncles grooved. They flower in the order as they are placed. These common plants are called Butter-flowers and Butter-cups, from a notion totally unfounded, that their splendid yellow flowers, contribute to give butter the same colour. The fact is, that they abound in fertile pastures, and flower at a season, when grafs is full of sap and highly nutritious.

The three species are all occasionally found wild with double flowers; in this state we frequently see the first and third cultivated in flower gardens, especially the third.

We should derive more satisfaction from informing the farmer how he might effectually root them out of his pastures, than how he might cultivate them successfully in his garden: for they propagate themselves with great facility, and occupy a considerable space in good meadows.



ELYMUS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx lateral, two-valved, aggregate, many-flowered.

SPECIES.

Elymus arenarius. *Sea Lyme-grass.*

Lin. spec. 122. *Huds. angl.* 56. *With. arr.* 124. *Lightf. scot.* 108. Figured by *Schreber.* 2. *t.* 40. and *Gmel. fib.* 1. *t.* 25. under the name of *Triticum*. Described in *Lin. spec.* *Schreb.* *Lightf.* and *Raii hist.* 1256. *n.* 5.

SPECIFIC CHARACTER.

Spike upright, compact. *Calyxes* tomentose, longer than the floret.

DESCRIPTION.

ROOT perennial. Leaves like those of the reed, bluish green, or whitish, channelled and stiff, rolled inwards and sharp pointed. Stalks two or three feet high, and upwards, strengthened by three or four joints, and terminated by a spike, eight or nine inches long, as large as a full-sized ear of wheat, but less compact: there are two spicules, or little

component spikes together; they are straight, contain two florets, and have no awns.

OBSERVATIONS.

It is a native of the sea coast, in many parts of Europe, growing in loose sand, and flowering from June to August.

The creeping roots of this grass prevent the sea sands from being blown away, and thus frequently prevent destructive inundations. Dr. Withering asks whether it might not be formed into ropes, as the *Stipa tenacissima* is in Spain,



Engraved & Published, Sept. 1851 by F. P. Fowler, 10 S. Brewer

Great, Golden Square, London

ARUNDO.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved. *Florets* crowded together, encompassed with wool.

SPECIES.

Arundo arenaria. Sea Reed-grass.

Lin. spec. 121. *fl. lapp. n.* 43. *Huds. angl.* 54. *With. arr.* 118. Figured in *Mor. hist. f.* 8. *t.* 4. *f.* 16. *row.* 3. *Ger. herb.* 38. 3. *emac.* 42. 3. *Park. theat.* 1198. 3.—*Florets*, *Scheuch. t.* 3. *f.* 8. A, B, C. *Monti* 92. Described by *Ray, hist.* 1259. *n.* 3. *With. & Krock. files. n.* 138.

SPECIFIC CHARACTER.

Calyxes one-flowered. *Leaves* rolled inwards, sharp-pointed and pungent.

DESCRIPTION.

ROOT perennial. Stalks a foot and half high, or more, with two or three joints. Leaves glaucous or bluish green, equalling or exceeding the stalks in length, at first flat, but by their dryness or that of the soil in which they grow, contracted on the sides and rolled up, so as to appear like rush

leaves. Spike roundish, four or five inches long, as thick as the little finger in the middle, but narrowing to each end.

OBSERVATIONS.

Native of the sandy coasts in Europe and America; flowering in June and July.

Linneus thinks it probable that this grass might originate from *Arundo epigeios* impregnated by the pollen of *Elymus arenarius*. Dr. Stokes is of opinion that it has a much nearer affinity in habit, as well as structure, to *Phalaris*, than to *Arundo*.

The sand gathers about this grass into hills or banks. The Dutch plant it on their sea banks with great success. And Mr. Woodward informs us that it is planted about Wells in Norfolk, to aid in repelling the sea. The country people know it by the name of Sea-Matweed, or Marram. They cut and bleach it for making mats; and where it is plentiful, houses are thatched with it*.

* Lin. lapp. With. Ray.



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SPECIES.

Lolium temulentum. Annual Darnel-grass.

Lin. spec. 122. *Huds. angl.* 55. *With. arr.* 121. Figured by *Schreber*, t. 36. *Fl. dan.* t. 160. *Ger. herb.* 71. 1. *emac.* 78. 1. *Park. theat.* 1145. 1. *Mor. hist. f.* 8. t. 2. row. 2. (*Lolium verum*). *Mus. rust.* 6. t. 1. f. 1.—Spike, *Leers herborn.* t. 12. f. 2. Spicule, *Scheuch.* t. 1. f. 7. E, F. *Monti* 18. Described by *Haller*, *helv. n.* 1420. *Pollich, pal. n.* 130. *Leers n.* 98. *Krock. files. n.* 190. *Raii hist.* 1262.

SPECIFIC CHARACTER.

Spike awned; spicules compressed, many flowered.

DESCRIPTION.

ROOT annual. Stalks two or three feet high, upright, round, especially near the spike, having 3, 4, or 5, joints. Leaves flat, pointed, from 9 inches to a foot or more in length, and 3 or 4 lines in breadth; the upper surface rough, the lower smooth. Sheaths striated, rough, crowned with a short blunt ligula, slightly notched at the edge. Spike from 5 or 6 inches to a foot in length. Spicules alternate, in a double row, pale green, half an inch long: the number of flowers in each varying from 5 to 9. The single valve of the calyx is the length of the spicule, and has not any awn; the terminating flower of each spicule, and fre-

quently the lower spicules, have two calycine valves. The outer valve of the corolla is only half the length of the calyx ; it is edged with white, and puts forth below the tip a straight awn, twice its own length. The seed is inclosed in the corolla, fastened to the inner valve, and does not quit it spontaneously.

OBSERVATIONS.

Though there can be no doubt of this being a distinct species from *Perennial Darnel*, or *Ray-grass*, (see p. & t. 4.) yet we are at a loss for specific distinctions ; for that has sometimes awns to the flowers, and this, not unfrequently, has none. This, however, is annual, taller and larger in every respect, and of a paler hue. Its place of growth is also different ; for it is a weed among corn, especially wheat and barley.

The flour of the seeds, mixed with wheat flour, produces disorders in the human body ; but it has not a sensible effect, unless taken in considerable quantity ; or, according to Linneus, eaten hot. The seed, malted with barley, soon occasions drunkenness. Hence the French name, *Ivraie*, and our English *Ray-grass*.

It flowers in July and August, later than *Lolium perenne*.

In this enlightened age it is scarcely necessary to correct an old vulgar error, that wheat degenerates into this grass. The fact is, that in very wet seasons, and among very bad husbandmen, Darnel (infelix *Lolium*) has so far prevailed as to suffocate the wheat, and to take its place.



TRIFOLIUM.

DIADELPHIA Decandria.

Nat. order of *Leguminous* or *Papilionaceous* plants.

GENERIC CHARACTER.

Flowers collected into a head. *Legumē* scarcely longer than the calyx, not opening but falling off.

SPECIES.

Trifolium repens. *Creeping White Trefoil, White Honeysuckle, or Dutch Clover.*

Lin. spec. 1080. *Huds. angl.* 324. *With. arr.* 792. *Figured by Curtis, lond.* 3. 46. *Micheli gen.* t. 25. f. 3, 4. *Rivin. tetr.* t. 17. f. 2. *Vaill. par.* t. 22. f. 1. *Ger. emac.* 1185. 1. *Park. theat.* 1110. f. 1. *Mor. hist.* f. 2. t. 12. f. 2.—Described in *Lin. suec. n.* 665. *Hall. helv. n.* 367. *Scop. carn. n.* 934. *Pollich, pal. n.* 699. *Krock. files. n.* 1201. *Lightf. scot.* 404. *Withering, Curtis, &c.*

SPECIFIC CHARACTER.

Heads of flowers like umbels; *legumes* with four seeds; *stalks* creeping.

ROOT perennial. *Stalks* numerous, spreading, round, unbranched, either green or purplish. *Leaflets* nearly sessile,

sharply ferrate, with a strong midrib, and numerous branching nerves, terminating in the ferratures, usually of an ovate shape, and blunt, but sometimes inversely heart-shaped and emarginate, or notched at the end; they are frequently of a purple colour, and most commonly have a white arch or crescent in the middle. Stipules lanceolate-ovate, in pairs, lengthened out into an awn, veined with purple. Petioles and peduncles very long, upright. Flowers (60) in a close head, very large in the cultivated plant, and of a round shape; each flower is on a short pedicel, and has a small awl-shaped bracte. The calyx is generally reddish; the teeth are nearly equal, only the two upper ones are rather longer than the others; and it is marked with ten streaks. Corolla white, or tinged with purple. The flowers stand upright till they are withering, and then they hang down. Legumes or pods oblong, round, jointed, terminating in a point, and containing from 2 to 4 seeds.

OBSERVATIONS.

White Clover is common in pastures throughout the greater part of Europe. It flowers from the end of May to September.

There are many varieties, depending on richness or poverty of soil, and other circumstances. Haller has noticed no less than eleven.

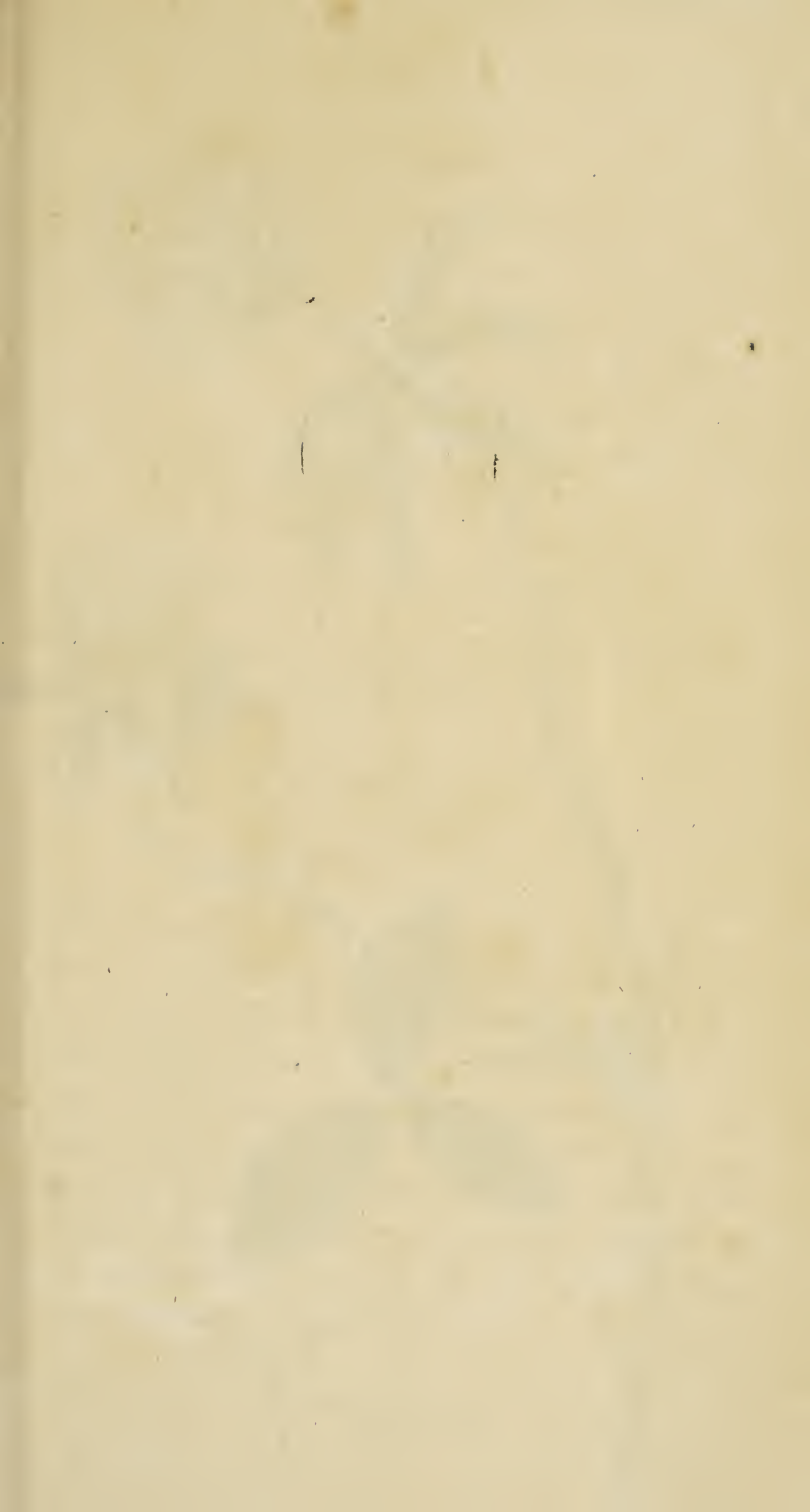
On all our good lands it seems to come spontaneously, and the growth of it is much encouraged by spreading of ashes. It does not come early, neither is it of a tall growth; but it forms an excellent bottom in pastures, and produces great abundance of succulent stalks and leaves, affording late feed in dry summers, when grasses are mostly burnt up. Mr. Curtis affirms that a single seedling, in his garden, covered more than a yard square of ground in one Summer.

We import the seed chiefly from Holland, whence it has obtained the name of *Dutch Clover*.

The leaves are a good rural hygrometer, being relaxed and flaccid in dry weather, but standing upright when it is moist.

We cannot ascertain when this White Clover came first into cultivation here, but it seems to be of very late date : for it is not mentioned by Gerard, Parkinson, or Ray, as an agricultural plant in this country, nor by any of the writers on husbandry of the last century, as far as we have been able to discover.

Gerard, however, says, that there is a Trefoil of this kind, which is sown in fields of the Low Countries, in Italy, &c., that cometh up ranker and higher than that which groweth in meadows, and is an excellent food for cattle, both to fatten them, and cause them to give great store of milk. *Herball*, p. 1018. edit. 1597.





SPECIES.

Trifolium ochroleucum. *Pallid Trefoil.*

Lin. syst. 689. *Huds. angl.* 325. *With. arr.* 797. *Relb. cant. n.* 540. *Raii hist.* 943. 8. & *syn.* 328. 3.—
Figured by *Jacquin austr.* 1. t. 40. *Mor. hist. f.* 2. t. 12. f. 12? — Described by *Haller, helv. n.* 378. *Krock. files. n.* 1208. *Gouan. illustr.* 51. *Jacqu. Ray, &c.*

SPECIFIC CHARACTER.

Spikes villous; stalk upright, pubescent, the lowest leaflets inversely heart-shaped.

DESCRIPTION.

ROOT biennial. Stalks villous, stiff, about a foot in height. Stipules in pairs, lanceolate, terminated by a long awn, striated, fringed with hairs. Leaves alternate, villous; leaflets sessile, the lower ones cordate and ovate in the same plant. Flowering heads rather of an ovate form. Calyx short, striated, fringed with hairs; the lower tooth very long, spreading, green; the other four equally short, tipped with purple, and sometimes wholly of that colour. Corolla of a pale brimstone colour; the standard very long, lanceolate, somewhat keeled; wings and keel equal*.

* Woodward, M. S.

OBSERVATIONS.

Native of dry pastures, thickets, and bushy places, in a calcareous soil in France, Switzerland, Austria, Silesia, and England. It is common near Cambridge; in Essex, Hertfordshire, Bedfordshire; near Stamford; about Bungay in Suffolk; Dupper's Hill, near Croydon, &c. Flowering in June and July.

This Trefoil is harsh, stiff, and hairy; and not abounding either in stalks or leaves, can never be sought for cultivation, where there are so many species superior to it.



COW-GRASS.

IN the fifth number of this work we promised to give our readers a figure of the Cow-grass, which we are now enabled to do, from plants growing in Mr. Curtis's garden at Brompton. They were sent him out of Hampshire. On comparing them with other plants of the wild broad Clover, which he had collected from different parts of Battersea field, we do not discover any differences, except that in the latter the heads of flowers are smaller, the stalks green, and without hairs, till they approach the flowers, which appear earlier than those of the Cow-grass.

It is evident that this is very different both from the true broad Clover, given in plate 3, and from that which we suppose to be the *Trifolium flexuosum* of Jacquin, engraved in plate 13. Nor does it at all resemble the wild perennial Clover of plate 2. But on examination, we find such a variety in the broad purple Clovers, in their wild state, that we are at a loss to determine any thing at present concerning them. Those who cultivate the Cow-grass will judge from their figure, which is very exact, whether theirs is the same plant; and also whether different sorts or varieties are not cultivated under the same name.

Mr. Lisle, in his observations on husbandry, (p. 250) says,
 “ The broad-clover grass, which of late years (anno 1707)
 “ had obtained some credit as a longer-living grass than the
 “ common broad-clover, and is sown under the name of
 “ cow-grass, I find to be the common purple trefoil, or

“ honey-fuckle trefoil, as described by Mr. Ray, (hist. 944.)
“ distinguished from the great purple meadow-trefoil, which
“ has always hitherto been sowed by the country farmers,
“ and I doubt not but always will ; for by experience I find
“ the other not to yield half the burden, nor indeed in poor
“ ground to be a longer liver than the common sort.”

We apprehend, indeed, that the true broad Clover is perennial ; it will certainly continue several years in a garden, where it is kept clean from weeds ; and it wears out sooner in cultivation, because it does not run at the root, and is overborne by natural grasses and other plants, which do.

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FLORA RUSTICA:

EXHIBITING

ACCURATE FIGURES OF SUCH PLANTS AS ARE
EITHER USEFUL OR INJURIOUS IN

HUSBANDRY.

DRAWN AND ENGRAVED BY

FREDERICK P. NODDER,

BOTANIC PAINTER TO HER MAJESTY,

AND COLOURED UNDER HIS INSPECTION.

WITH

SCIENTIFIC CHARACTERS, POPULAR DESCRIPTIONS,
AND USEFUL OBSERVATIONS,

BY

THOMAS MARTYN, B.D. and F.R.S.

FELLOW OF THE LINNÆAN SOCIETY,

AND

PROFESSOR OF BOTANY IN THE UNIVERSITY OF
CAMBRIDGE.

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ALLION. pedem. Car. Allionii Flora Pedemontana, 3 volumes. Turin, 1785, fol.

Anderson's Essays, relating to Agriculture and Rural Affairs, 2 volumes. Edinb. 1784, 8vo, Third edition.

Camer. epit. Joachimi Camerarii Epitome utilissima de Plantis. Franc. 1586.

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AGRIMONIA.

DODECANDRIA *Digynia*.

GENERIC CHARACTER.

Calyx five-toothed, fenced with another. *Petals* 5.
Seeds 2, in the bottom of the calyx.

SPECIES.

Agrimonia Eupatoria. *Agrimony*.

Lin. spec. 643. *Hudsf. angl.* 206. *With. arr.* 490. *Curtis lond.* V. 32. *Lightf. scot.* 247.—Figured in *Mill. illustr. Jungh. offic. cent.* 1. f. 6. *Berg. phyt.* 2. 205. *Fl. dan. t.* 588. *Ger.* 575. *emac.* 712. *Park.* 594. 1.—Described by *Haller helv. n.* 991. *Scop. carn. n.* 567. *Pollich. pal. n.* 452. *Krock. files. n.* 718. *Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Stem-leaves pinnate, with the odd one petioled;
fruits hispid.

DESCRIPTION.

THE *root* is perennial, and in the Spring sweet-scented. The *stalk* is upright, from a foot to three feet in height, cylindrical, rough with hairs, sometimes single, and sometimes

branched. The *leaves* are interruptedly pinnate, and placed alternately; they consist of several (3-6) pairs of soft, ovate, sessile leaflets, which are serrate and ciliate; the smaller leaflets between these are entire, or at most trifid. The flowers are thinly scattered in a long simple spike. They are of a yellow colour, and when fresh gathered, smell like apricots*. The number of stamens is very uncertain, and usually 10 to 12, sometimes more, and not unfrequently fewer. The covering of the seeds is formed of the calyx, contracted at the neck, and hardened; being surrounded with hooked awns at the top, it adheres readily to the clothes of the passenger.

OBSERVATIONS.

It is common in a dry soil, by the sides of hedges and ditches, in woods, in pastures, and on the borders of corn fields; flowering from June to September.

According to Linneus, sheep and goats alone eat it; but we may venture to affirm with Mr. Curtis, that cattle in general leave it untouched.

The plant has a bitterish roughish taste, with a weak aromatic flavour. It is a rural remedy in habitual diarrhœas and indispositions from a lax state of the solids. The leaves make a pleasant infusion, or tea, said to be serviceable in hæmorrhagies, and in obstructions of the liver and spleen. They may be used also by way of cataplasm in bruises and fresh wounds†.

The Canadians are said to use an infusion of the root in burning fevers, and with great success. Dr. Hill affirms, that the same infusion is an effectual cure for the jaundice‡.

* Withering. † Lewis and Lightfoot. ‡ Withering.

When this plant is coming into flower, it will dye wool a good bright nankin colour; gathered in September, it yields a darker yellow. It gives a good dye in all states, and being a common plant, easily cultivated, probably deserves to have trials made with it by the dyers.

In the Berlin acts it is recommended for dressing leather.



1 5-5-5

SCANDIX.

PENTANDRIA Digynia.

GENERIC CHARACTER.

Corolla radiate. *Petals* emarginate. *Fruit* subulate.

The florets in the disk are frequently male.

SPECIES.

Scandix Pecten. *Shepherd's-needle*, or *Venus's-comb*.

Lin spec. 368. *Huds. angl.* 123. *With. arr.* 304.

Curtis lond. V. 21. Figured in *Jacqu. austr.* 3. t.

263. *Fl. dan. t.* 844. *Ger.* 884. *emac.* 1040. 1.

Park. 916. 1.—Described by *Hall. helv. n.* 754.

(*Myrrhis*) *Pollich pal. n.* 296. *Krock. files. n.*

446. *Lyons in Relh. cant. n.* 233. *Curtis, With-*

ering, &c.

SPECIFIC CHARACTER.

Seeds with a very long beak.

DESCRIPTION.

STALK from 6 inches to a foot in height, a little branched, cylindric, somewhat hairy, at bottom purple, or striped with purple lines. *Leaves* bipinnate, finely cut; the segments linear, bifid or trifid, and pointed. The universal umbel ge-

nerally consists of two rays, sometimes three; the partial of ten. There is no universal involucre; but the partial involucre is composed of five uncommonly large leaflets, which are ribbed, ciliate, and usually bifid. The flowers are white; there are commonly some in the middle, which are regular and male, others in the circumference, which are female, and irregular, having the outer petals largest. Seeds running out into a very long beak, which is flattened, and has fine prickles pointing upwards at the angles.

OBSERVATIONS.

This plant is a very common weed among corn; and though a small annual plant, is sometimes in such quantity as to be injurious to the crop. It flowers in June, and ripens its seed before harvest.

It may easily be known by its fine cut leaves, its singular large bifid involucre, and particularly by the beaks to the seeds, which are two inches in length, and so much resembling those of the Cranebill, that it might be easily mistaken for one by a novice in Botany.

We do not know of any use to which this plant has ever been applied. It is of the same genus with Chervil, and having something of the same smell and taste, might perhaps be put to the same use. We should be cautious however what substitutions we make in this class of umbellate plants, in which many species are poisonous. One even of this genus, *Scandix Anthriscus*, is of a suspicious character.



BRIZA.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, many-flowered. *Spicule* in two rows, with heart shaped, blunt valves; the inner one minute.

SPECIES.

Briza media. Middle Quaking-grass.

Lin. spec. 103. *Huds. angl.* 38. *With. arr.* 92. *Relb. cant. n.* 73.—Figured in *Fl. dan. t.* 258. *Mor. hist.* 8. 6. 45, 46. *Ger.* 80. 2. *emac.* 86. 2. *Park. theat.* 1165. 2.—Panicle, *Leers herb. t.* 7. f. 2. *Scheuch. t.* 4. f. 8, 9.—Described by *Hall. helv. n.* 1448. (*Poa*) *Scop. carn. n.* 109. *Pollich. pal. n.* 97. *Krock. files. n.* 146.

SPECIFIC CHARACTER.

Spicules ovate. *Calyx* shorter than the (7) florets.

DESCRIPTION.

ROOT perennial. *Culm* upright, 6 or 7 inches high in a dry soil, but in wet and boggy places, 2 or 3 feet in height; having 4 or 5 knots on it, 3 of which are near the root.

Leaves from 2 to 3 or 4 inches in length, and a line or a line and half in breadth; the upper one forms a sheath for the panicle, which continues a long time within it. *Panicle* handsome, spreading very much when in flower, and having two spicules on each branch: each spicule is composed of 7; 8 or 9 florets, and being all placed on very long, fine peduncles, shake with the least air or motion: they are heart-shaped, flattened, shining, smooth, varying in colour, usually variegated with green, white and purple, but sometimes they are entirely white.

OBSERVATIONS.

This beautiful grass is very common in pastures, where it is easily distinguished by the continual shaking of the little spikes. Hence most of its common English names, as well as that of old authors, *Gramen tremulum*. It flowers from May to July.—Plants that are much noticed by the common people are sure to have many names: this is called Quaking-grass, Cow-quakes, Shakers; and from its fineness, Ladies hair. It is eaten fresh by cattle, and made into hay, with other grasses, but we do not know that it has any particular quality or excellence, nor is it ever cultivated separately. A larger sort (*Br. maxima*) is sometimes admitted into gardens for its beauty.





RESEDA.

DODECANDRIA Trigynia.

GENERIC CHARACTER.

Calyx one-leafed, parted. *Petals* jagged. *Capsule* gaping at the mouth, and one-celled.

SPECIES.

Reseda Luteola. *Dyer's-weed*, or *Weld*.

Lin. spec. 643. *Huds. angl.* 207. *With. arr.* 492—Figured in *Fl. dan. t.* 864. *Ger.* 398. 1. *emac.* 494. *Park. theat.* 603. 1. *Pet. brit.* 38. 12. *Blackw.* 283.—Described by *Hall. helv. n.* 1058. *Poll. lich. pal. n.* 453. *Krock. siles. n.* 719. *Withering*, &c.

SPECIFIC CHARACTER.

Leaves lanceolate, entire, with a tooth on each side at the base. *Calyxes* four-cleft.

DESCRIPTION.

ROOT annual. *Stem* from a foot to three feet in height, upright, smooth, furrowed, leafy. *Leaves* spreading on the ground in a ring, bright yellowish green, shining, sessile, from three to five inches in length, and near half an inch in breadth, waving about the edge; they have a minute reddish

tooth on each side of the base : the stem-leaves are alternate, and the upper ones linear. *Spike* very long, bending at the end, sometimes having more than 350 flowers in it ; each of them stands singly, on a short pedicel, and has a single, subulate, yellowish bracte at the base : they are of a pale yellow colour, and about one-sixth of an inch in diameter. Calyx cut into four segments ; petals three, the upper one melliferous, cut half way into six parts ; the lateral ones opposite and trifid ; besides these, there are sometimes two very small ones at bottom, which are entire. *Stamens* from twenty to thirty. *Capsule* with three valves, rolled inwards, so as to fold about the seeds.

OBSERVATIONS.

This plant is not uncommon in a wild state, in pastures, fallow fields, waste places, and on dry banks and walls ; flowering in June and July. The root and bottom leaves are generally formed from the fallen seeds before winter ; and thus it happens in this, as in many other cases, that the wild plant is biennial ; whilst the cultivated plant, growing from seeds sown in the Spring, is annual.

It is an observation of Linneus's, that the nodding spike of flowers follows the course of the sun, even when the sky is cloudy ; pointing towards the east in a morning, to the south at noon, and westward in the afternoon ; in the night it points to the north.

Cattle do not eat this plant, except that sheep sometimes crop it. Dyers, however, make considerable use of it ; for it affords a most beautiful yellow dye, which is valuable for its brightness. Blue cloths are dipped in a decoction of it in order to become green. The yellow colour of the paint,

called Dutch pink, is obtained from this plant. The dying quality resides in the stalks and roots*.

Mr. Miller, who gives particular directions for the culture of Weld, affirms, that though it will grow upon very poor soil, yet the crop will be in proportion to the goodness of the land. Dr. Withering, on the contrary, says, that it is cultivated in sandy soils, rich soil making the stalk hollow, and not so good. A sandy loam probably suits this plant best; on poor sand the crop will be light, and heavy clays are certainly not proper for it.

In various authors it has the name of *Dyer's-weed*, *Yellow-weed*, *Weld*, *Would*, *Woold*, and *Wild Woad*. The London dyers know it by the name of *Woold*.

* Withering.



ISATIS.

TETRADYNAMIA Siliquosa.

GENERIC CHARACTER.

Siliqua or pod lanceolate, having a single cell with one seed in it, and two boat-shaped valves; it is deciduous.

SPECIES.

Isatis tinctoria. Common dyer's Woad.

Lin. spec. 936. *Huds. angl.* 299. *With. arr.* 717.—

Figured in *Ger.* 394. *emac.* 491. *f.* 1, 2. *Park. theat.* 600. *Mor. hist. f.* 3 *t.* 15. *f.* 10, 11. *Pet. brit. t.* 48. *f.* 9. *Blackw.* 246.—Described by *Hall. helv. n.* 523. *Pollich pal. n.* 645. *Raii hist.* 842.

SPECIFIC CHARACTER.

Root-leaves crenate; stem-leaves sagittate; filicles oblong.

DESCRIPTION.

ROOT biennial. *Stem* upright, stiff, round, very smooth, reddish, leafy, branched very much towards the top, from two to three feet high in a wild state, but attaining nearly the height of four feet when cultivated. *Leaves* next the root ovate-lanceolate, running a little into the petiole,

slightly toothed about the edge, somewhat glaucous, not unlike the leaves of Hound's-tongue. The leaves on the stem are alternate, and embracing, two or three inches in length, and scarcely half an inch in breadth, mostly entire, but sometimes very finely toothed about the edge, quite smooth, except that some of the lower ones have a few hairs on the lower surface about the edge, and on the midrib. In the cultivated plant the leaves are smoother than in the wild one, of a more lucid green, and of a thicker consistence; both they and the whole plant are larger. The uppermost leaves are linear-lanceolate. The flowers are small, but very abundant, growing very close in racemes or clusters, at the ends of the stem and branches. The corolla is of a yellow colour, each of the four petals notched at the end; the calyx being also of a greenish yellow, some old writers took it for part of the corolla; the leaflets of this, however, are smaller than the petals. The silicles or little pods hang down on slender fruit-stalks; they are oblong, flattened, blunt at the end, broader in the middle and at top, narrower at bottom, half an inch long, and one eighth of an inch broad, smooth, and when ripe turning of a chestnut colour so dark, as to appear black.

OBSERVATIONS.

Woad can hardly be considered as an indigenous of Britain, though plants are occasionally found that have escaped from cultivation. It is a native, however, of many parts of Europe, from the shores of the Baltic to Spain and Italy. With us it flowers in June and July. It is in great use among the dyers both for dying blue, and as a basis for several other colours. It is commonly supposed to be the plant with which the ancient Britons painted their bodies; though Mr. Miller will have it that they used the *Weld*, be-

cause that is a native, whereas *Woad* is of late introduction.

Cæsar, and other Latin authors, call Woad by the name of *Vitrum*, which probably is a translation of the Gaulish name *Glassa*. Our English names, *Woad* and *Wade*, are from the German *Waid*; in Low Dutch, *Weet*; or from the Italian *Guado*, which may possibly be from *Glastum*.

According to Hackluyt (2. 46.) we were dependent upon France for Woad, in 1576: and we are informed, in Stow's annals, that in Queen Elizabeth's time, the cultivation of it was even forbidden.

It appears, however, that this prejudice was well got the better of. For Walter Blith, in 1653, says,—“ It hath
“ been one of the greatest enrichments to the masters there-
“ of, until the midst of our late wars, of any fruit that the
“ land did bear.”

It requires a strong soil, that is not moist; and it is commonly sown on fresh land, near great towns, where plenty of dross can be procured. We observed considerable pieces of it last year in the neighbourhood of Bristol.

See Camden's *Britannia*, Gibson's edition, p. 343. and Gough's, p. 333, under Bedfordshire.



EUPHRASIA.

DIDYNAMIA Angiospermia.

GENERIC CHARACTER.

Calyx four-cleft, cylindrical. *Capsule* two-celled, ovate-oblong. *Anthers*, the lower ones, have a little thorn at the base of one of the lobes.

SPECIES.

Euphrasia Odontites. *Red Eye-bright.*

Lin. spec. 841. *With. arr.* 636.—*Bartsia Odontitis*, *Huds. angl.* 268.—Figured in *Curtis lond.* I. 44. *Fl. dan. t.* 625. *Rivin. mon.* 90. 2. *Ger.* 85. *emac.* 91. 3. *Park. theat.* 1329. 3. *Mor. hist.* 11. 24. 10. *Petiv. brit.* 36. 4.—Described in *Hall. belv.* n. 304. *Scop. carn. n.* 754. *Pollich, pal. n.* 582. *Leers herborn. n.* 476. *Krock. files. n.* 970. *Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Leaves linear, all ferrate.

DESCRIPTION.

ROOT annual. The whole plant commonly tinged with brownish red. *Stem* upright, stiff, from 6 inches to a foot

In height, obtusely four-cornered, rough with hairs, having numerous branches in opposite pairs. *Leaves* opposite, sessile. *Flowers* in long leafy spikes, all pointing one way or growing on one side of the stalk, in pairs, or single, on short peduncles. *Calyx* hairy on the outside; the teeth equal and sharp. *Corolla* dusky red or purple (sometimes varying to white), hairy, the upper lip compressed and scarcely emarginate, the three lobes of the lower lip shorter than the upper, equal, truncate, finely notched. All the lobes of the anthers are thorny at the top, or end in short taper points, and are bearded at the base. Germ hairy, surrounded and sheathed at the base by a skinny membrane. Style, before the flower opens, bent in under the upper lip, afterwards longer than the corolla, most hairy towards the bottom. Seeds whitish, streaked.

OBSERVATIONS.

This is a common weed, both in corn fields and pastures, especially where it is moist; flowering from July to September. According to Linneus, most cattle will eat it. With us it appears to be untouched in the pastures; and we are assured by an ingenious observer, that when it is in full vigour, cattle, so far from eating it, will abstain from the grass even to the distance of some inches from the plant.



HORDEUM.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx lateral, two-valved, one-flowered, three-fold.

SPECIES.

Hordeum murinum. *Wall* Barley-grass.

Lin. spec. 126. *Huds. angl.* 56. *With.* 126. *Ray, syn.* 391. 1.—Figured in *Curtis, lond.* 5. t. 9. *Fl. dan.* t. 629. *Mor. hist. f.* 8. t. 6. f. 4. *Ger. herb. t.* 66. f. 2. *emac.* 73. f. 1. *Park. theat.* 1144. f. 7.—Described by *Hall. helv. n.* 1536. *Pollich. pal. n.* 132. *Krock. files. n.* 193. *Scheuch. agrost.* 14. *Curtis, &c.*

SPECIFIC CHARACTER.

Lateral florets male and awned; involucre of the intermediate florets ciliate.

DESCRIPTION.

ROOT annual. Stalks numerous, a foot or eighteen inches in height, round, smooth, frequently branching at bottom, where they are procumbent, and bend at the joints; these are about five in number, they swell out, and are either paler than the stalk, or sometimes tinged with purple; the upper part of them is erect. Leaves from 3 or 4 to 6 inches

in length, and a quarter of an inch in breadth, covered with a soft down on both sides. Spikes two or three inches long, pale green. Three flowers are contained within each six-leaved involucre; the middle one fertile and sessile; the side ones males, and on very short pedicels; all three are alike in size or shape, or sometimes the latter are a little smaller. The outer valve of the corolla ends in an awn an inch or an inch and a half in length; and rough when handled from the point downwards; the inner valve is truncate at the end, and slightly emarginate; from the base springs a straight awn, the length of the filaments.

OBSERVATIONS.

This is a very common grass by the sides of paths, and under walls, whence its trivial name, both in Latin and English. It is called also *Way-Bennet*, and *Wild Rie* or *Rie-grass*. There is a species nearly allied to this, which is the true *Rie-grass*; and we shall give a figure of it in a future number. It flowers during the greater part of the summer. We do not remember to have observed it in the body of a meadow. The information however, which, on the most respectable authority, we derive from Mr. Curtis, merits attention and farther inquiry. “ In the Isle of Thanet
“ this grass is well known to the innkeepers, who call it
“ Squirrel-tail grass. They find, that if horses feed on it
“ some time, the beards or awns stick into their gums, and
“ make them so sore, that they are in danger of being
“ starved. The gentleman who related this fact, added,
“ that on the road he had a bill put into his hand, signify-
“ ing, that at such an inn travellers might depend on having
“ hay without any mixture of Squirrel-tail grass.”

Haller writes very seriously, that this grass does not seem to be Barley degenerated. We hope it is no longer necessary to contradict an error so very vulgar as this.





SPECIES.

Hordeum maritimum. *Marsh Barley-grass.* *Wither.*

Bot. Arr. 127.

H. marinum. *Huds. angl.* 57.

Gramen fecalinum palustre & maritimum. *Ray, syn.*

392. 3.

Figured in *Mor. hist.* f. 8. t. 6. f. 5.

Described by *Scheuchzer, agrost.* p. 18.

SPECIFIC CHARACTER.

Lateral florets male and awned; inner involucre half-ovate. *Huds.*—rather, half-spear shaped, not ciliate.

DESCRIPTION.

THIS differs from Wall Barley-grass, in having shorter pyramidal spikes, made up of a greater number of scales more crowded together, with the awns more standing out, those at bottom longest, and becoming gradually shorter towards the top of the spike*.

Involucres roughish, neither ciliate nor scored. Florets smooth; the middle ones sessile; the lateral ones on very short peduncles at the base of their involucre, and their awns somewhat longer than the floret †.

* Ray, syn. † Withering.

OBSERVATIONS.

Found in salt marshes near the sea, flowering in June and July. It may be doubted, till experiments are made, whether this be a distinct species. So much alteration arises in the appearance of grasses, by salt water and sea air, that some caution is necessary in determining whether they be really different or not.



SPECIES.

Hordeum sylvaticum. *Wood Barley-grass.* *Huds.*

angl. 57. *Hall. herb. n.* 1537.

H. cylindricum. *Murr. prodr.* 43.

Elymus europæus. *Lin. syst.* 125. *mant.* 35. *With.*

arr. 124.

Gramen fecalinum majus sylvaticum. *Ray, syn.* 392.—

maximum Park. theat. 1144. 7.

Gr. hordeaceum montanum, &c. *Scheuch. agr.* 16.

prod. t. 1.

SPECIFIC CHARACTER.

All the florets hermaphrodite, awned; involucre connate at the base, shorter than the awns.

Huds.—Spike upright, spikelets two-flowered, involucre equal. *Lin. mant.*

DESCRIPTION.

ROOT perennial. Stalk upright, stout, two feet high and upwards, having 4 or 5 joints. The leaf at each of these is about a span in length, and a quarter of an inch or rather more in breadth; smooth to appearance, but roughish to the touch, especially round the edges. Sheaths hairy. Spike narrow, two inches or more, and sometimes near three inches in length; much narrower, more naked, less rough, and harder than in *Wall Barley-grass*; the spikelets stiffer and longer, the pedicels thicker, and the awns shorter, except that of the inner

valve of the corolla, which is longer: the middle floret is rather larger than the two others, with an awn somewhat shorter. They are all smooth to the naked eye, but appear hairy with a magnifier*. There are frequently only two florets; the lower on a very short pedicel; the upper on one near half its length; with the rudiment of a third pedicel at the base of the inner valve. According to Dr. Stokes, the floret is generally single.

OBSERVATIONS.

Native of woods, chiefly in a calcareous soil; as near Stokenchurch; between Marlow and Henley; near Berkhamstead; Ripton in Huntingdonshire; Matlock; and in the North much more frequent than in the South. It flowers in June. In structure it is an *Elymus*; in habit it approaches rather more to the *Hordeum*. In truth, it seems the connecting link between these two genera†.

It is a coarse grass, like most of those which grow in woods, and sometimes is drawn up to a great height.

* Haller. † Stokes in Withering.





POLYGONUM.

OCTANDRIA Trigynia.

GENERIC CHARACTER.

Calyx none. *Cor.* five-parted, calycine. *Seed* 1, angular.

SPECIES.

Polygonum Fagopyrum. *Buck-wheat.*

Lin. spec. 522. *fl. suec. n.* 345. *Huds. angl.* 172.

With. arr. 414. *Leers herborn. n.* 300.—Figured in *Miller illustr. Plenck. ic. medic. t.* 310. *Mor.*

hist. f. 5. *t.* 29. *f.* 1. *Ger. herb.* 82. *f.* 2. *emac.* 89.

Park. theat. 1141.—Described by *Hall. helv. n.* 1563. *Ray hist.* 182.

SPECIFIC CHARACTER.

Leaves cordate-sagittate, stem nearly upright, but weak; angles of the seeds equal.

DESCRIPTION.

ROOT annual. Stalk succulent, round, smooth, either wholly green, or tinged with red, from a foot to eighteen inches in height; sometimes quite simple, but frequently having small branches coming out singly and alternately from the bosom of each leaf. Leaves succulent, triangular, or

shaped like the head of an arrow, but varying somewhat in form, smooth, dark green, entire about the edge, but sometimes waving; the lower leaves are on petioles two inches in length, but these grow gradually shorter, till at the top of the stalk they become sessile. The flowers come forth in upright spikes from the axils at the top of the stem and branches; on slender peduncles an inch or more in length. They make a handsome appearance, and are either quite white, or tinged with red; with age they become more red*. There are eight little glands surrounding the base of the germ. The eight filaments are the length of the corolla; four between the glands and the germ, and four between them and the corolla. The seed is naked, scarcely covered at the base†.

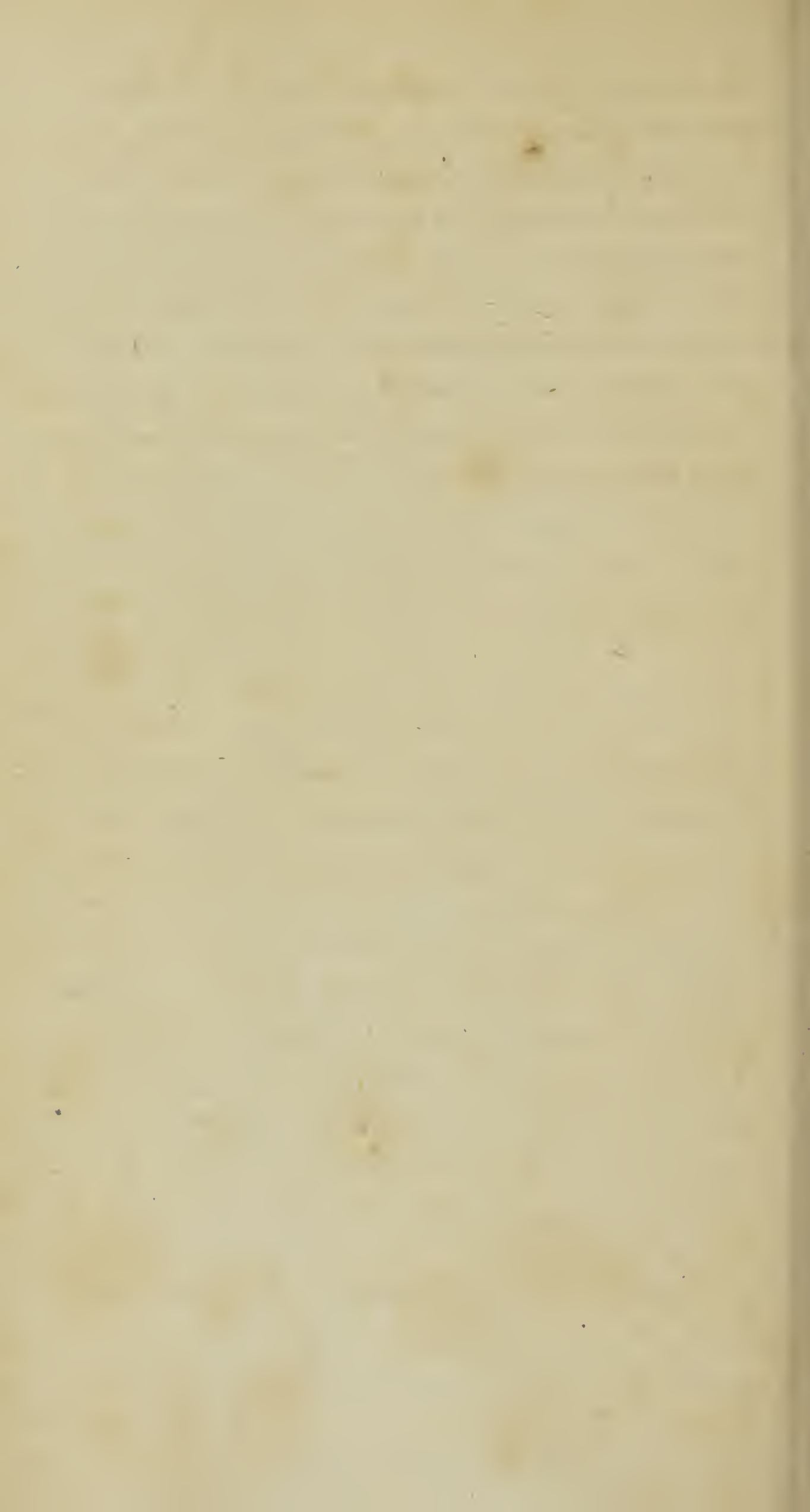
OBSERVATIONS.

Buckwheat is supposed by some to have come originally from Africa; but it is generally allowed that we derived it from Asia. It is certainly not indigenous of Europe, though in most parts of it now found on dunghills, and about cultivated fields. Flowering in July and August. Besides *Buck* and *Buck-wheat*, (Beech-wheat, from the likeness of the seed in form to Beech-mast) it has the appellations of *Brank*, *Crap*, and *French Wheat*. Gerard has also the name of *Bullmong*.

It seems to have been cultivated time out of mind in England. Gerard, in 1597, informs us that “it is very common about Namptwiche in Cheshire, where they sow it as well for food for their cattle, pullen, (poultry) and such like, as to serve instead of a dunging. It groweth likewise in Lancashire, about London, as also in Kent and Essex.”—It is by no means so common a crop with us,

* Haller, Ray. † Leers.

as in many parts of the Continent ; the county of Norfolk grows more of it than any other. The principal use of it is for cleaning foul land. It is either ploughed in as a manure when fully grown, or mowed for fattening swine and poultry with the grain. It is said also to be good feed for horses mixed with chaff or bran. A field of Buck-wheat furnishes a rich repast for bees late in the summer. It is made into thin cakes, called crumpets, in some parts of England, and the meal is supposed to be nutritious, not apt to turn acid upon the stomach.







HEDYSARUM.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Corolla with the keel tranversely obtuse. *Legume* jointed, with one seed in each joint.

SPECIES.

Hedysarum Onobrychis. Saint-Foin.

Lin. spec. 1059. *Huds. angl.* 322. *With. arr.* 785.

Ray, syn. 327.—Figured in *Jacqu. austr. t.* 352.

Rivin. tetr. t. 2. *Dod. pempt.* 548. 2. *Lob. ic.*

81. 2. *Mor. hist. f.* 2. *t.* 11. *f.* 10. *Ger. herb.*

1062. 1. *emac.* 1243. 1. *Park. theat.* 1082. 1.—

Described by *Hall. helv. n.* 396. *Pollich palat.*

n. 694. *Krock. files. n.* 1190. *Withering, &c.*

SPECIFIC CHARACTER.

Legumes one-seeded, prickly; *wings* of the corolla equal in length to the calyx; *stem* elongate.

DESCRIPTION.

ROOT perennial. Stems round, streaked, at first procumbent, but when in flower ascending. Leaflets 8 or 10 pairs, with an odd one. Peduncles or flower-stalks long, slightly hairy, bearing numerous flowers in a long spike, each having an awl-shaped bracte, longer than the pedicel.

The calyx is hairy, one fourth of the length of the flower, and has five awl-shaped teeth nearly equal. The corolla has an oval standard, slightly emarginate, partly bent back, shorter than the keel, flesh-coloured, streaked with red veins; the wings not longer than the teeth of the calyx, hooked near the base, pale flesh colour; the keel broad, bent with an obtuse angle at the top, flesh-coloured, with a deeper red beneath. The legume or pod is hemispherical, compressed, with wrinkled prominences *.

OBSERVATIONS.

Saint-Foin is a native of almost every part of Europe from Britain southwards, in hilly pastures, particularly on a calcareous soil. With us it was remarked in a wild state, before it was adopted for cultivation, on many of our chalk downs, as on Gogmagog hills, Newmarket heath, Royston downs, Luton downs, Salisbury plain, Cotswold hills, &c. The old names were *Medick Vetchling* and *Cock's-head*. The modern name of *Saint-Foin* came from France, whence and from Flanders we originally had the seed; and among cultivators it is frequently called *French-grass*.

It has been long cultivated in several parts of Europe, on dry soils, for feeding cattle; and with us on the Cotswold hills, in Cambridgeshire, Hertfordshire, Essex, on Epsom downs, about Malton, in Yorkshire, &c.—It seems to have crept in here about the middle of the last century, but not to have been fully established till towards the close of it. It would be too long to produce all my authorities; I shall only therefore observe, that the first mention of it, as a plant in cultivation, among our English writers, is by Parkinson, in 1640. His expression is “that it is known generally to be

* Woodward, MS.

“ a singular food for cattle ;” but he by no means affirms that it was then cultivated in England. We may indeed presume that it was not, or at least in very few places ; for Hartlib, in 1651, blames his countrymen for neglecting it ; and Walter Blith speaks of it, in 1653, as a French grafs, very little known ; but as having been sown at Cobham park, in Kent, and some other dry chalky banks. By an anonymous pamphlet, published in 1671, it appears “ that
“ divers places had then in part received great benefit from
“ it.” Mr. Ray, in 1686, informs us, “ that it began not
“ long since to be sown among us for feeding cattle, to the
“ very great advantage of many ; that it furnishes abundance of milk ; and that, as it delights in a dry chalky
“ foil, not favourable either to grafs or corn, it may be cultivated to great advantage.”—Mr. Lisle speaks of it in 1703, as then generally cultivated. Thus has this useful plant been fully established ; and one, out of the many from the leguminous tribe, has become commonly known to husbandmen.





MEDICAGO.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Legume compressed, screw-shaped. *Keel* bending down from the banner.

SPECIES

Medicago fativa. *Lucern.*

Lin. spec. 1096. *Huds. angl.* 335. *With. arr.* 806.—

Figured in *Clus. hist.* 2. 242. 2. *Lob. ic.* 2. 36. 2.

Ger. emac. 1189. 2. *Park. theat.* 1114. 1. *Mor.*

hist. f. 2. t. 16. f. 2. *Bauh. hist.* 2. 378. 1.—De-

scribed by *Hall. helv. n.* 382. *Pollich pal. n.* 712.

Krock. files. n. 1221.

SPECIFIC CHARACTER.

Flowers in racemes or bunches, *legumes* or pods contorted or twisted, *stem* upright and smooth.

DESCRIPTION.

ROOT perennial. Stems streaked, branched, from a foot and a half to two feet in height. Leaves ternate; leaflets elliptic, entire at the base, but finely serrate towards the end; the midrib is lengthened into a point; they are slightly downy on the upper surface, smooth and streaked with veins

on the under ; all on pedicels, the middle one longest. Peduncles axillary, longer than the leaves. Flowers in thick spikes, each on a short pedicel, with an awl-shaped bracte. Calyx nearly smooth, with five awl-shaped teeth, almost equal. Corolla purple. The legumes have two or three distant turns*.

OBSERVATIONS.

Lucern is not originally a native of Europe, but was imported into Greece from the East, in the time of the Persian war, under Darius ; whence they gave it the name of *Medica*. It is said to be the principal fodder for horses in Persia to this day. It has been cultivated time immemorial in the southern countries of Europe ; but it has not even yet gained a firm establishment in Great Britain.

Mr. Miller informs us, that seeds were brought over from France about the year 1650, and sown here† ; but that it was afterwards so neglected, as to be almost entirely forgotten. In Gerard's time (1597) we had only a small quantity thereof, as he expresses it, in our gardens, for pleasures sake. Parkinson, in 1640, informs us, that it was sown in Spain, France, and the Low Countries, but does not hint at our having it then in England. Hartlib took some pains to make enquiries about it in France. But it is barely mentioned by Blith, as being cultivated there. It seems to have been very little known in the time of Mr. Lisle, who is said to have continued his enquiries and experiments to the time of his death, in 1722. Mortimer speaks of it rather by hearsay, than from any actual knowledge of it. Tull recommends the culture of it in his

* Woodward, MS.

† He alludes, as we suppose, to Hartlib's queries, in 1651.

horse-hoeing husbandry. But Mr. Miller appears to have been the first who brought it into that degree of cultivation which it is in at present. The attention of the public was also called to it by Mr. Rocque, in 1765. He says, that a farmer in Kent had then fourteen acres of it, but that one-and-twenty years before, there were not two hundred pounds weight of the seed in London. It was also then encouraged by premiums from the Society of Arts, &c. We remember the cultivation of it among gentlemen in different parts of the country, for forty years back.

From what Miller and Tull have written on this subject, it has been generally supposed in England, that Lucern will not answer if sown broadcast; and yet of many thousand acres which we have seen in France, Switzerland, and Italy, we never saw a single acre in drills. For gentlemen the latter method may answer very well; it will certainly last longer in this mode of culture, and may easily be kept clean by the horse-hoe. But as a common article of fodder for farmers, it will perhaps scarcely answer the expence and trouble. When sown broadcast, it will last about eight years, or perhaps longer, if the land be laid down very clean; but the natural grass gradually wears it out, as we observed, wherever we saw it cultivated on the Continent.

It has been greatly celebrated, as increasing the milk of kine; but particularly for foiling horses. Yet Haller, who certainly knew it well, asserts that cattle are apt to grow tired of Lucern, and that they are subject to be blown by it. We have not, however, heard, that it has these inconveniences in so great a degree as Clover. He also affirms, that none but the best soil will do for it. It certainly succeeds best on a light dry loam, or good sand; our own experience has taught us that it will not do on clay, or where there is a wet springy bottom; but we have had it flourish

exceedingly among dry gravel and lime-rubbish. The earliness is one of its greatest recommendations. It has been cut 17 inches high on the 9th of April.

By means of these two plants, *Saint-Foin* and *Lucern*, with the addition of *Clover*, the farmer is furnished with what he calls *Artificial Grasses*, suited with good management, to almost every kind of soil. The first to the chalks, gravelly and stony lands; the second to light loams; and the third to clays. Few places indeed are so happy as to admit the cultivation of all with equal success; and yet we observed these three growing side by side, at the foot of the south downs, near East Bourn, seeming to vie with each other which should flourish the most, and yield the greatest crop. But this was in a soil, wherein the calcareous and argillaceous were so happily mixed, that almost any vegetable might succeed: and yet here we saw them ploughing up a stubble, on a level, where there is not a stone to impede them, with eight stout oxen.

The name *Lucern*, by which this plant is now generally known among us, is modern. Old English writers call it *Medick-fodder*, or *Burgundy Trefoil*.



Green Springs S. Co. v. M. J. & S. P. Winter, A. W. Brown, et al.



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BRASSICA.

TETRADYNAMIA Siliquosa.

GENERIC CHARACTER.

Calyx upright, converging. *Seeds* globular. A *Gland* between the shorter stamens and the pistil, and between the longer stamens and the calyx.

SPECIES.

Brassica Rapa. Turnep.

Lin. spec. 931. *Huds. angl.* 289. *Wither. arr.* 708.—

Rapa rotunda. Miller dict.—*fativa. Bauh. pin.* 89.

Figured in *Blackw. herb. t.* 231. *Fuchs.* 212. *Trag.*

728. *Matth.* 435. *Dod.* 673. 1. *Lob. obs.* 98. 1.

ic. 197. 1. *Camer. epit.* 218. *Ger. herb.* 177. f.

1, 2. *emac.* 232. 1. *Mor. hist. f.* 3. t. 2. f. 1. *Pet.*

brit. t. 45. f. 7.

Described by *Bauh. hist.* 2. 838. *Ray hist.* 800.

Long rooted Turnep is figured in *Bauh. hist.* 2. 838.

Matth. 436. *Dod.* 673. 2. *Lob. obs.* 98. 2. *ic.*

197. 1. *Camer. epit.* 219. *Ger. emac.* 232. 2.

Mor. hist. t. 2. f. 2. *Petiv. brit. t.* 45. f. 8.

SPECIFIC CHARACTER.

Root caulescent orbicular flatted fleshy.

DESCRIPTION.

THIS plant, now so common in cultivation, is sufficiently known to every body by its round fleshy roots. These, however, vary exceedingly in their form, size, and colour; which is owing principally to our viewing them only in a cultivated state. The leaves which arise immediately from the root are very large, of a full green, rough, and jagged or gashed almost to the midrib. From the midst of these, early in the second season of its growth, springs a stalk four or five feet high, in good ground reaching the human stature. The leaves on this are very different from the root-leaves; they are oblong, pointed, embrace the stem, are smooth and glaucous. The flowers are yellow, on long, slender, smooth footstalks. The pods are cylindric; and the seeds are spherical, of a rufous or reddish brown colour, not unlike those of Cabbage.

OBSERVATIONS.

The appearance of the Turnep in the first and second stages of its growth are so different, that we have thought it necessary to give two figures of a plant so important in rural oeconomy. We shall not attempt to specify its numerous variations. These are chiefly in the root, and arise from the different soils, situations and manners, in which it is cultivated. Probably the long-rooted Turnep approaches nearest to a state of nature; wherein the root would only swell out a little, and be of a stringy texture, with something of acrimony in the taste. From this state to the large, tender, succulent, globular, or spheroidal root, there is a wide interval. Pliny and Tragus speak of roots weighing forty pounds; Amatus of some amounting to fifty or sixty; and Matthiolum of many exceeding fifty pounds, and of some

approaching to an hundred. Yet we are told that four pounds is now reckoned an extraordinary weight for a Turnep-root in Italy, and that they usually weigh only from a quarter to half a pound. The greatest weight that we are acquainted with is thirty-six pounds; and at Stow, in Gloucestershire, a farmer produced four turneps, weighing an hundred weight; and offered a bet of an hundred pounds that he would bring eighty turneps, weighing, one with another, a ton. This root varies also in colour, being white, blackish, red, and yellow, on the outside; the latter of them is of the same colour throughout. The white is the most common, but we have figured the red, as best adapted to a coloured plate.

Considering the importance of this root in Husbandry, and the length of time which it has been cultivated in the Low Countries, it is a matter of surprise that it should have been adopted so late in this country.

There is reason to believe that Charles, Lord Viscount Townshend introduced Turneps into Norfolk, at least to any great extent, probably about the year 1730, when he retired from public business to Rainham, or soon after; perhaps earlier, for he was Ambassador Extraordinary to the States General in 1709, when he might have become acquainted with the Turnep culture on the Continent*. We are not, however, to suppose that this truly-patriotic Nobleman was the first who brought Turneps into England; nor do I think that he led the way even in Norfolk itself. For Mr. Lisle, whose observations in Agriculture were made between 1693 and 1722, informs us that he was assured by Mr. Heron, of Norfolk, that they dung their turnep-land

so much, that their dry-land meadows are quite impoverished by it*. He discoursed also with Mr. Gooch, a Norfolk gentleman, about the turnep-husbandry of that county; particularly on a distemper to which the root is subject, called the *banbery*†. He mentions the growth of turneps in Hampshire, Berkshire, and Leicestershire, in 1698 and 1699: and says that the Newtown men who hoed his Turneps in 1707, had made this their business for many years‡. He refers also to Mr. Worlidge, (who writ in 1668) as saying that the greatest enemies to Turneps are the flies||. It must be allowed, however, that the culture does not seem to have been well understood.

Barnabe Googe, indeed, says—" We use to sowe Rapes
 " for the sustenance both of man and beast." But we are to recollect that his work is a translation from the German; and that the above passage refers to that country. He goes on to say—" There are divers sorts of them, some of them rounde,
 " some growe all in length, and are most pleasant in taste,
 " as at *Binge*, and in the countrey of *Bavar*. Some againe
 " of the quantitie of a man's head, and of a hundred
 " pound weight: but the smallest sort is the sweetest§."

Thomas Cogan, in his *Haven of Health*, affirms, " that
 " although many men love to eate Turneps, yet swine by
 " nature doe abhorre them¶."

* Observations in Husbandry, p. 233.

† The same, p. 239. ‡ p. 233, 235, 237, 238. || p. 234.

§ Foure Bookes of Husbandrie, by M. Conradus Heresbachius. Newly Englished, and increased by Barnabe Googe, Lond. 1586. qu. fol. 59.

¶ Edit. 1588. p. 64.

Neither Gerard (1597) nor Parkinson (1629) give the smallest hint of this root being then in field-culture for cattle. The former indeed says, “ the Turnep prospereth well
“ in a light, loose, and fat earth ; and groweth in fields and
“ divers vineyardes or hoppe gardens in most places of Eng-
“ land.” But he probably does not speak here of its being cultivated, but growing wild.—“ The small Turnep (he
“ says) groweth by a village near London, (called Hacke-
“ ney) in a sandie ground, and brought to the Crosse in
“ Cheapside by the women of that village to be solde, and
“ are the best that I have ever tasted *.”

Turneps, however, were certainly cultivated for cattle about the middle of the last century. For Sir Richard Weston, in his *Discourse of Husbandrie used in Brabant and Flanders* †, after saying, that “ the Husbandrie of Turneps
“ is as common between Gaunt and Antwerp, as that of
“ Flax—that they will feed Oxen and Kine as fat as Hay
“ or Oats. That the roots being clean washed, and then
“ roots and leaves put into a trough, and these stampd toge-
“ ther with a spitter, and after boiled in water and given to
“ Kine; will make them abound in milk, yet grow so fat
“ withal, that you would wonder at it:”—Adds, that “ the
“ onelie difficultie is to make your cattle eat them at first,
“ but breed them up by hand as they do there. Others do
“ the same alreadie in many parts of England ; they will
“ take Turneps and eat.” He then proceeds to encourage their cultivation by showing, that an acre of them will be worth eight pounds when cattle are brought to eat them as theirs do.

* Herball, p. 178. † Edit. 2. 1652, p. 24.—The first edition is in 1645.

He remarks, however, in another place, that “ although
 “ they alreadie grow in England, yet there is as much dif-
 “ ference between what groweth there (in Brabant and
 “ Flanders) and here, as is between the same thing, which
 “ groweth in a garden, and that which groweth wilde in
 “ the fields*.”

Mr. Ray (in 1686) informs us that Turneps are sown
 every where in fields as well as gardens, for the sake of their
 roots, both in England and in foreign countries†.

Mortimer, at the beginning of the present century, says,
 that “ Turneps are of a very great advantage to be sown in
 “ fields, as food for cattle in winter. He adds, that in
 “ Suffolk they commonly give them to their cattle in the
 “ house, and that Hogs will also eat them if they are first
 “ boiled‡.”

The curious agriculturist will be glad to see the compara-
 tive produce of Turneps with Potatoes, Carrots, and Cab-
 bages, ascertained as follows :

White Turneps, per acre,	24,080	lb.	or	10	Tons,	15	cwt
Red Turneps —————	20,944	————	9	————	7		
Potatoes —————	26,880	————	12	————			
Carrots —————	41,600	————	18	————	11	————	48 lb.
Cabbages —————	55,125	————	24	————	12	————	21

* P. 26.—† Hist. Plant. p. 800. ‡ Art of Husbandry, edit.
 2. 1708. p. 122.—First edition in 1706.

|| On the authority of Montagu Burgoyne, Esq. of Mark
 Hall, near Harlow, in Essex: in Young’s Annals, n. 109. p. 411.





SINAPIS.

TETRADYNAMIA *Siliquosa.*

GENERIC CHARACTER.

Calyx spreading. *Corolla* with upright claws. *Gland*
as in *Brassica*.

SPECIES.

Sinapis nigra. Common Mustard.

Lin. spec. 933. *fl. suec. n.* 611. *mat. med.* 164.
Huds. angl. 297, *With. arr.* 713. *Light. scot.*
361. *Relb. cant. n.* 495. *Ray syn.* 295.—Figured
in *Blackw. herb. t.* 446. *Baub. hist. 2.* 855.
Woodv. med. bot. t. 151.—Described by *Pollich*
pal. n. 643. *Krock. files. n.* 1102. *Villars dauph.*
339. *Woodv.* 409. *Baub. hist. Raii hist.* 803. 3.
Ger. emac. 243. *Withering, &c.*

SPECIFIC CHARACTER.

Pods smooth, pressed close to the raceme.

DESCRIPTION.

ROOT annual. Stem, round, striated, the upper part smooth, three or four feet in height, with many distant spreading branches. Leaves next the root rough, on the

stem smooth, the uppermost frequently simple, lanceolate, sharply toothed. Calyx yellow. Corolla pale yellow. Pods short, parallel to the stem, with a smooth beak; the peduncles are slightly hairy.

Johnson's description is exact. "Our ordinarie Mustard hath leaves like Turneps, but not so rough, the stalks are smooth, and grow sometimes to three, four, or five cubits high; they have many branches, and the leaves upon these branches, especially the uppermost, are long and narrow, and hang downward on small stalks; the cods are short, and lie flat and close to the branches, and are somewhat square: the seed is reddish or yellow*."

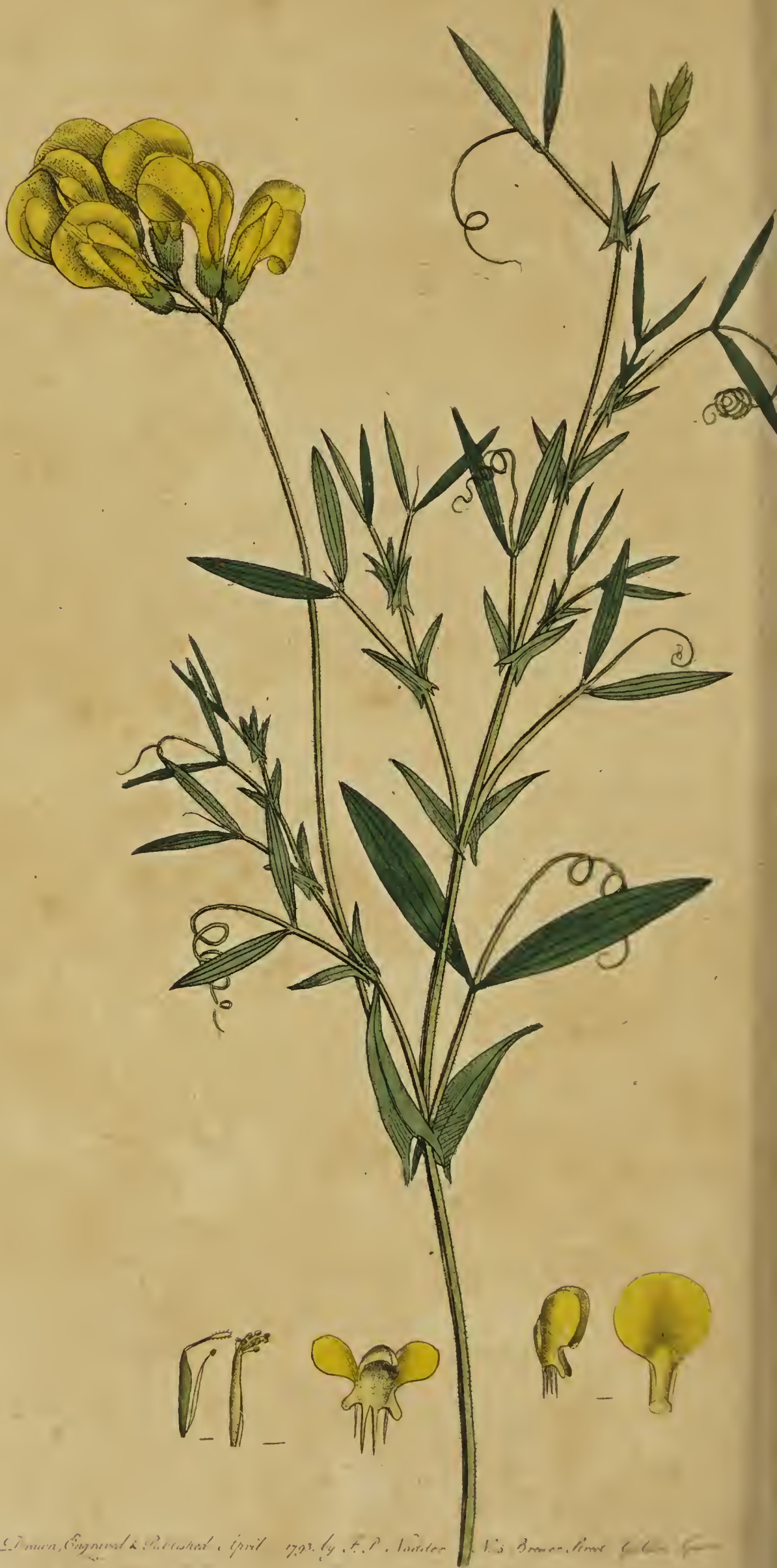
Ray's distinctions are also good ones.—"It is a loftier plant than White Mustard or Charlock; the upper part of the stem and the branches are smooth; the pods short, pressed close to the stem, and almost quadrangular; the seeds are the smallest among these plants†." We may add, that the leaves are of a much darker colour, and their divisions blunter than in the White Mustard; the flowers are smaller, and the pods smooth.

OBSERVATIONS.

Common or black Mustard grows wild in corn fields, on the banks of ditches and by road sides; flowering in June and July. It is also cultivated for the seed, which is used both medicinally and for culinary purposes. The tender leaves are sometimes boiled and eaten as greens in the spring. Whenever they throw the earth out of their ditches in the Isle of Ely, the bank comes up thick with mustard.

* Ger. emac. p. 243. The figure is wrong.

† Raii syn. 295.



LATHYRUS.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Calyx the two upper segments shorter than the other three. *Style* villous on the upper part, broader upwards.

SPECIES.

Lathyrus pratensis. *Meadow Lathyrus.*

Lin. spec. 1033. *fl. suec. n.* 647. *Huds. angl.* 317. *With. arr.* 717. *Light. scot.* 391.—Figured in *Curtis lond.* 3. t. 44. *Rivin. tetr. t.* 43. *Fl. dan. t.* 527. *Mor. hist. f.* 2. t. 2. f. 2. *Bauh. hist.* 2. 304. 2. *Lob. ic.* 2. 69. 2. *Ger. emac.* 1231. 6. *Park. theat.* 1061. f. 1.—Described in *Hall. helv. n.* 436. *Pollich pal. n.* 679. *Krock. files. n.* 1165. *Villars dauph.* 443. *Raii hist.* 894. 4. *Baubin, Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Peduncles many-flowered, tendrils two-leaved, quite simple, (sometimes with two or three clefts) leaflets lanceolate.

DESCRIPTION.

ROOT perennial, creeping. Stems a foot or eighteen inches, and sometimes three feet in length, or more, when without support procumbent, but mounting by means of tendrils, and having the appearance of being upright in meadows, and especially among bushes; they are obtusely quadrangular, and much branched. Leaves in pairs, lanceolate, quite entire, smooth or slightly villous underneath only, marked with three nerves, on triangular furrowed footstalks. Stipules in pairs, large, shaped like the head of a halbert, or half the head of an arrow, frequently having sharp processes at the base. Flowers in a raceme, directed one way, from 4 or 5 to 8 or 10, on axillary peduncles four or five inches long, four-cornered; each on a hairy pedicel, with a very minute awl-shaped bracte at the base. Calyx one third of the length of the corolla, divided half way into five awl-shaped segments, which are rather unequal, and somewhat hairy. Corolla yellow. Legumes an inch and half long, compressed, smooth, black, containing from 7 or 8 to 12, globular, shining seeds, of a yellowish or brown colour, with small purple dots.

OBSERVATIONS.

It grows very frequently in pastures, woods, thickets, and hedges, flowering from June to August.

According to Linneus, Horses, Kine, Sheep, and Goats, eat it. Swine refuse it, and the Badger is said to feed upon it.

In old authors this plant is much reprobated as a vile weed that spreads much by means of its creeping roots; and Mr. Miller will not have it admitted into gardens. Many modern writers, however, recommend it as an excellent food for cattle, and not without reason, since its quality is good,

and it bears a large burden of succulent leafy stalks. Among its patrons we may reckon Linneus, Haller, Schreber, Anderson, Curtis, and Young.

It is called in English Yellow Vetchling or Tare-everlasting.

With respect to these leguminous plants, we are not to conclude that they are disagreeable to cattle, because they do not eat them in their fruiting state. They may still be excellent in hay, and the cattle may be fond of the young succulent herbage.



Drawn, Engraved & Published April 1843 by F. P. Aitchison & Co. Brewer & Co. London

LOTUS.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Legume cylindric, stiff and straight. *Wings* longitudinally converging upwards. *Calyx* tubulous.

SPECIES.

Lotus corniculatus. Common Bird's-foot Trefoil.

Lin. spec. 1092. *fl. suec. n.* 675. *Huds. angl.* 329. *Wither. arr.* 804. *Curt. lond.* 2. 56. *Lightf. scot.* 411.—Figured in *Curtis. Rivin. tetr. t.* 76. *Dod. pempt.* 573. 2. *Lob. obs.* 501. 2. *ic.* 2. 44. 1. *Fuchsf. hist.* 527. *Ger.* 1022. 6. *emac.* 1190. 5. *Bauh. hist.* 2. 355. & 356. 1. *Mor. hist. f.* 2. *t.* 18. *f.* 10.—Described in *Haller helv. n.* 385. *Scop. carn. n.* 937. *Pollich pal. n.* 711. *Krock. files. n.* 1219. *Villars dauph.* 414. *Raii hist.* 967. 5. *Bauhin, Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Stems prostrate, heads of flowers flat, legumes cylindric, spreading.

DESCRIPTION.

ROOT perennial. Stems slender, bluntly four-cornered, generally procumbent, but in meadows upright or nearly so, from 6 or 7 inches to a foot and half in height, in different soils and situations, and in the several varieties. Leaves ternate, differing extremely in form in the varieties from bluntly-ovate to linear-lanceolate. The stipules vary as the leaves do; they are broader however, and more pointed. The flowers grow in flattened heads, resembling umbels, on peduncles two or three inches long, but on pedicels hardly a line in length; there is a single sessile leaf at the base of each head. Calyx fringed with long soft hairs. Corolla, before it opens, of a bloody red on the outside, and of a yellowish green within; when expanded of a full yellow: all the petals are equal, and stand each on narrow separate claws; the standard is bent back, and the wings are oblong-ovate. Legumes smooth, spreading like the spokes of a wheel, and ending in a long straight point. Seeds many, sometimes more than twenty, small, somewhat kidney-shaped and spotted.

OBSERVATIONS.

The Bird's-foot Trefoil is another instance of the excellence of leguminous plants as a food for cattle. It is common in good pastures, where it grows to a considerable height, is of a quality equal, if not superior, to most of the Trefoils, contributes to give substance to the hay, and might doubtless be cultivated to good advantage alone. On heaths and dry pastures it is small and procumbent. In woods it is large and upright, but woolly.

This plant has been confounded with Ladies Finger, *Anthyllis Vulneraria*, to which it is much superior in rural oeconomy. And with Liquorice Vetch, *Astragalus glycy-*

phyllos, a very strong-smelling sticky plant, which does not seem to be agreeable to cattle, though Linneus affirms that horses, kine, goats, and sheep, eat it.

The flowers appear from June to August. The similitude of the stipules to the leaves occasioned some of the old writers to call it *Lotus pentaphyllos*, or five-leaved Lotus. Mr. Anderson has treated largely of it, and very well, except that he has mis-called it *Astragalus glycyphyllos*, or Milk-Vetch. See *Curtis lond.*



GALIUM.

TETRANDRIA Monogynia.

GENERIC CHARACTER.

Corolla of one petal and flat. *Seeds* two roundish.

SPECIES.

Galium verum. *Yellow Ladies Bedstraw.*

Lin. spec. 155. *fl. suec. n.* 123. *Huds. angl.* 69. *With. arr.* 155. *Lightf. scot.* 115. *Curtis lond. n.* 63. *Relh. cant. n.* 127.—Figured in *Curtis, Miller fig. t.* 139. *Berg. phyt.* 2. 63. *Plenck. ic. t.* 54. *Fuchsf.* 196. *Bauh. hist.* 3. 720. 1. *Dod. pempt.* 355. 1. *Camer. epit.* 368. *Lob. obs.* 467. 3. *Ger.* 967. 1. *emac.* 1126. 1. *Park. theat.* 564. 1. *Mor. hist. f.* 9. *t.* 21. *f.* 1. *Blackw. herb.* 435. *Petiv. brit. t.* 30. *f.* 8.—Described in *Hall. helv. n.* 710. *Scop. carn. n.* 153. *Pollich pal. n.* 152. *Krock. files. n.* 221. *Raii hist.* 482. *Baubin, Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Leaves eight in a whirl, linear, grooved; flowering branches short.

DESCRIPTION.

ROOT perennial, creeping, yellow. Stem from one to two feet high, upright, slightly four-cornered, somewhat flexuose, scabrous, pubescent, branched towards the top. Leaves about an inch in length, bluntish with a slight point, narrowed at the base, the edges rolled back, the upper surface dark green and glossy, the under hollowed and paler, from 8 or 10 in a whirl, decreasing to 2 and even 1 at the extremities of the branches. Flowers numerous, small, yellow, fragrant with a peculiar odour, in an interrupted branched panicle, about a span in length *.

It is observed by Dr. Withering, that the segments of the corolla are greatly expanded; that the style is cloven more than half way down; and that not only the corolla, but the stamens also and pistil are yellow. The stamens, as Linneus observes, grow brown after they have shed their dust.

OBSERVATIONS.

This plant is common in pastures, and by the sides of fields and roads, in a dry soil; flowering from June to September. It will flourish in the most unremitting drought, when not a blade of grass is to be seen. Besides the common names of Ladies Bedstraw and Cheese Rening, Gerard has those of Maid's-hair and Petty Mugwet, the latter from the French *Petit Muguet*. In Johnson's edition of Gerard's Herbal, it is called *Our Ladies Bedstraw*.

It is a notion as old as Dioscorides and Galen, that the flowers and herb of this plant will curdle milk. Though no coagulation followed in experiments which we tried forty years ago, yet we should not perhaps have ventured to dispute the fact, were we not supported by Bergius and Krocke,

* Curtis fl. lond.

who did not succeed in curdling milk with this herb alone. The former of these writers affirms, that he could not procure any acid from it in distillation. Mr. Townsend informs us, that the Spaniards substitute the down of the Chardoon or Wild Artichoke (*Cynara Cardunculus*) for rennet. They make a strong infusion of it over night, and the next morning, when the milk is warm, they put nearly half a pint of the infusion to about fourteen gallons of milk.

The flowering-stalks dye a good yellow colour ; and the roots a very fine red, not inferior to Madder, and even of a brighter colour ; but they are small.

The subject has been taken up by the Committee of Privy Council for Trade : and the cultivation of the plant for dyeing a red colour with the roots, is described in the 18th volume of Mr. Young's *Annals of Agriculture*.

The French prescribe the flowers in hysteric and epileptic cases.



CARUM.

PENTANDRIA Digynia.

GENERIC CHARACTER.

Fruit ovate-oblong, streaked. *Involucre* one-leafed.

Petals keeled, inflex-emarginate.

SPECIES.

Carum Carui. Caraway.

Lin. spec. 378. *fl. suec. n.* 260. *Huds. angl.* 126.
Wither. arr. 312. *Hall. helv. n.* 789. *Pollich.*
pal. n. 304. *Krock. files. n.* 465. *Jacqu. austr.* 4.
t. 393. *Woodv. med. bot.* 125. *t.* 45. *Plenck. ic.*
t. 214. *Blackw. herb. t.* 529. *Rivin. pent. t.* 55.
Mor. umb. t. 8. *hist. f.* 9. *t.* 9. *f.* 1. *Ger. herb.*
 879. *emac.* 1034. *Park. theat.* 910. *Raii hist.*
 446. *syn.* 213.

DESCRIPTION.

ROOT biennial. The whole plant is smooth. Stalks from eighteen inches to two feet in height and upwards, with spreading branches. Leaves decom pound, long and narrow. The universal involucre is generally one-leafed, as Linneus describes it; but it has sometimes as far as five caducous leaflets. Rays of the umbel from 9 to 12. Florets in an umbellule as far as 20, white or tinged with red; some

of them neutral, according to Linneus; but all fertile, as Dr. Withering affirms.

OBSERVATIONS, &c.

Parkinson says, that the young roots are better eating than parsneps. The tender leaves may be boiled with pot-herbs. The seeds, it is well known, are much used in cakes, and incruſted with ſugar; they are diſtilled alſo with ſpirituous liquors for their flavour. The ſeeds were formerly recommended by Dioſcorides to pale-faced girls, and in more modern days their uſe in that caſe is not forgotten: nor are they a deſpicable remedy in tertian agues. They abound with an eſſential oil, which is antſpaſmodic and carminative*. One ounce in thirty of this oil ariſes in diſtillation from the ſeeds; whereas 16 pounds of the herb in flower, ſtripped from the ſtalks, ſcarcely yields an ounce†.

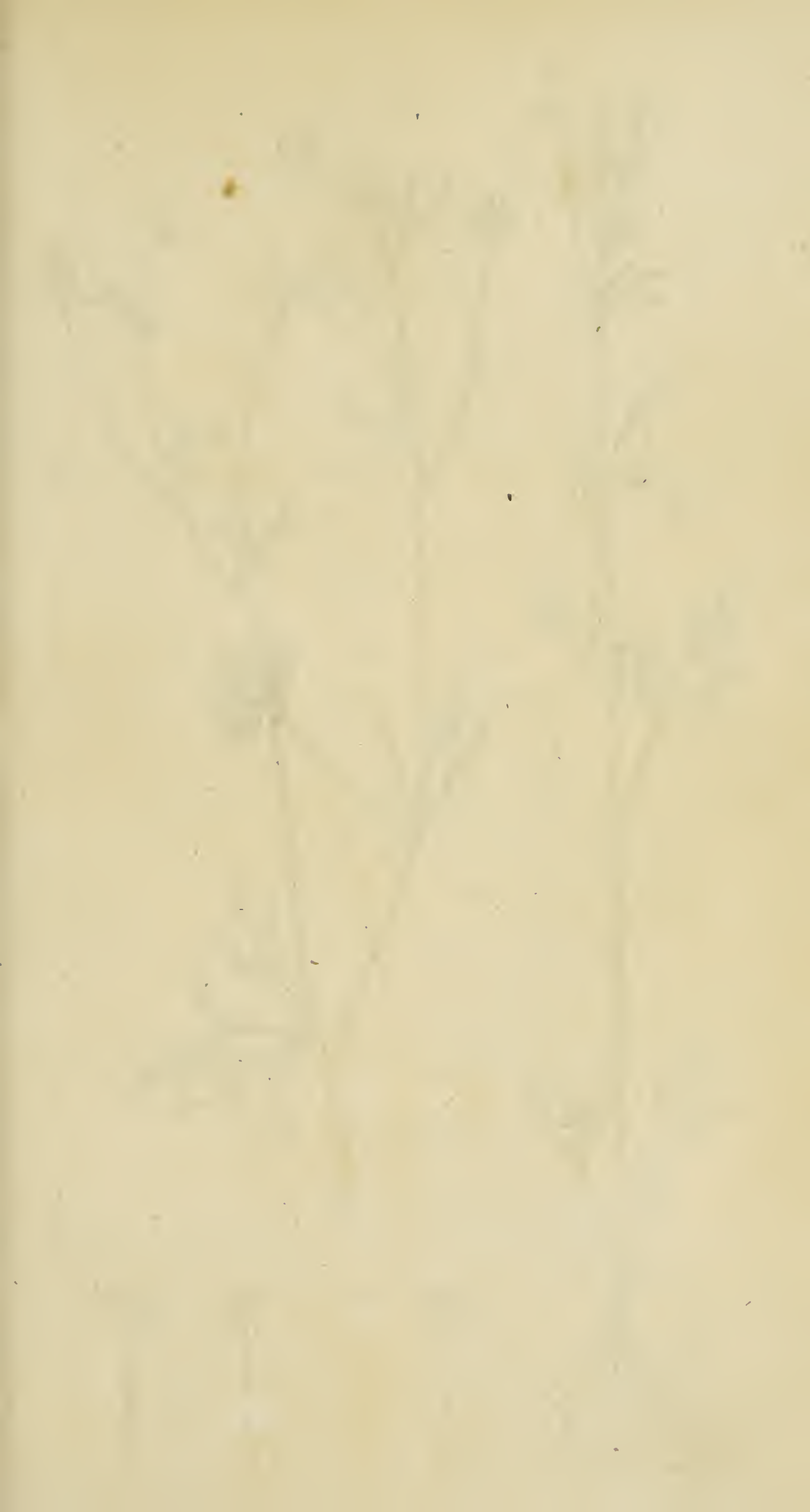
Schreber affirms that the Caraway is excellent food for kine.

It is found wild in paſtures near London, Cambridge, Bury, in Norfolk, Lincolnſhire, near Hull in Yorkſhire, &c.—But it is chiefly cultivated in Eſſex. It flowers in May and June.

Mr. Houghton ſays, “ Although Carraway-ſeed is ſcarce
“ now‡, yet not many years ſince a friend of mine near Col-
“ cheſter produced ſo much, that it was ſold for twopence,
“ and I believe leſs, the pound. I am afraid his great quan-
“ tity did him damage; however I believe ’tis made now
“ one of the ſtaple pieces of huſbandry ||.

* Withering. † Lewis. ‡ “ At the end of the laſt century.”

|| Collect. 2. 462.





Drawn, Engraved & Published, May 1793, by F. P. Vodder, 18, Broad Street, Golden Square

RANUNCULUS.

POLYANDRIA Polygynia.

GENERIC CHARACTER.

Calyx five-leaved. *Petals* five, with a honied pore at the claw of each within. *Seeds* naked.

SPECIES.

Ranunculus arvensis. *Corn Crowfoot.*

Lin. spec. 780. *Huds. angl.* 242. *Wither. arr.* 576.
Hall. helv. n. 1176. *Scop. carn. n.* 693. *Pollich.*
pal. n. 537. *Krock. files. n.* 885. *Fl. dan. t.* 219.
Mor. hist. f. 4. *t.* 29. *f.* 23. *Petiv. brit. t.* 38. *f.*
 10. *Ger. herb.* 805. 3. *emac.* 951. 3. *Park.*
theat. 328. 4. *Raii hist.* 585. 1. *syn.* 248.

SPECIFIC CHARACTER.

Seeds prickly; upper leaves decompound, linear.

DESCRIPTION.

THIS species is easily distinguished from the Meadow Crowfoots already figured, by its annual root and prickly seeds. The stalk is upright, a foot high or more, leafy, round, smooth, except towards the top, where it is pubescent, branching. Root-leaves trifid, broader than the

others, and on longer petioles: stem-leaves alternate, usually three-parted, with the lobes again deeply divided into two or three parts. Flowers very small, brimstone-coloured. Stamens 14-16. Seeds 5 or 6 (sometimes 8 or 9) flat, covered with awl-shaped prickles.

OBSERVATIONS.

Corn Crowfoot abounds among crops of all kinds in most parts of Europe. It flowers in May and June; and has feeded before harvest. Linneus affirms that the seeds do not come up till the second year. It is said to be as highly acrimonious, when fresh, as any of the species. In some countries it has the name of *Hungerweed**; whence we should presume, that it is supposed to indicate a barren soil.

It were much to be wished that these vernacular names could be collected together; for till that is done, there will never be an understanding between theoretical and practical men.

* Hollefeare in Withering.



SISYMBRIUM.

TETRADYNAMIA Siliquosa.

GENERIC CHARACTER.

Siliqua or pod opening with straightish valves. *Calyx* and *Corolla* spreading.

SPECIES.

Sisymbrium Sophia. *Flixweed.*

Lin. spec. 920. *Huds. angl.* 297. *Wither. arr.* 693.
Hall. herb. n. 484. *Scop. carn. n.* 821. *Pollich. pal. n.* 629. *Krock. files. n.* 1064. *Fl. dan. t.* 528.
Blackw. herb. t. 440. *Ger. herb.* 910. 1, 2. *emac.* 1068. *Park. theat.* 830. 3. *Petiv. brit. t.* 46. f. 12. *Raii hist.* 812. *syn.* 298.

SPECIFIC CHARACTER.

Petals smaller than the *calyx*. *Leaves* decomposed-pinnate.

DESCRIPTION.

ROOT slender, annual. Stalk upright, round, a foot and half or two feet high, branched very much. Leaves, considered in the whole, triangular, three inches long and upwards, two inches broad, very minutely divided; the last

divisions linear and very narrow. Flowers in a long, loose raceme at the end of the stalk and branches, growing singly on peduncles near half an inch in length; there are frequently more than an hundred flowers in one raceme. The corolla is of a pale yellow, and remarkably small. The pods are very slender, about half an inch in length, so obscurely four-cornered as to seem round, swelling out a little where the seeds are; these are numerous, small, roundish, smooth, and yellow.

OBSERVATIONS.

Flixweed is not uncommon on walls, among rubbish, about church-yards, hedges, dunghills, &c. It flowers in June and July; and ripens its seeds in August and September. The pods retain the seeds all winter, for the food of small birds.

According to Linneus, sheep and kine eat the plant; horses and goats are not fond of it; and swine refuse it. With us it seems seldom to be cropped by cattle, except from wantonness. The force of gunpowder is said to be augmented, by mixing a tenth part of Flixweed seeds with the other ingredients. The plant is sometimes prescribed in dysenteries and hysteric cases: and the seeds are given to destroy worms*.

* See Lin. succ. Withering, Chomel, &c.





Iris sibirica L. f. *Botanical Magazine* 1798, p. 1. *Botanical Magazine* 1798, p. 1. *Botanical Magazine* 1798, p. 1.

CROCUS.

TRIANDRIA Monogynia.

GENERIC CHARACTER.

Cor. six-parted, equal. Stigmas convolute.

SPECIES.

1. *Crocus officinalis*. Saffron, or autumnal *Crocus*.

Lin. spec. 50. *α. mat. med.* 43. *Woodv. med. bot.* 479.
t. 176. *Huds. angl.* 13. *α. Wither. arr.* 37. *α.*
Relh. cant. n. 27. *Bauh. pin.* 65. *Bauh. hist.* 2.
 637. *Raii hist.* 1176. *syn.* 374.—Figured in
Mill. fig. t. 111. *Mill. illustr.* *Berg. phyt.* 2. *t.*
 161. *Plenck, ic.* 32. *Blackw. t.* 144. *f.* 1. *Mor.*
hist. f. 4. *t.* 2. *f.* 1. *Ger.* 123. *f.* 1, 2. *emac.* 151.
Park. parad. 169. *f.* 2.

SPECIFIC CHARACTER.

Leaves narrower, rolled in at the edges; stigma trifid to a considerable length.

DESCRIPTION.

SAFFRON differs from the Spring *Crocus* in having the stigma divided into three very long segments, the ends of which are also trifid; these three horns of the stigma are also

odorous and aromatic, which is not the case in that. The flowers are much larger, and do not vary in colour so much as in the Vernal Crocus, from their high native purple. They differ also in their roots and leaves, the time of flowering, and place of growth.

OBSERVATIONS.

Saffron came originally, with most other bulbous plants, from the East, where it first acquired that high reputation in medicine which it has now almost lost in Europe. Our European term for it is evidently from the Arabic *Sahafuran*. It is cultivated in Italy, Sicily, Spain, France, Germany, Hungary, and England.

It is commonly said that Saffron was originally brought into England in the time of Edward III.; and that Sir Thomas Smith introduced it into the neighbourhood of Walden in Essex. We cannot find any sufficient authority for either of these assertions. It is certain that it has been cultivated in Herefordshire and Hampshire, and that it is now confined to a very small district in Cambridgeshire, at the foot of Gogmagog hills. It was planted abundantly near Walden at the end of the sixteenth, and at the beginning of the seventeenth centuries. It migrated gradually into Cambridgeshire between the years 1695 and 1723, when the place of its growth was the large tract of ground between Saffron Walden and Cambridge, in a circle of about ten miles diameter. The quantity of ground under Saffron has been gradually lessening during the last twenty-five years; and if some means are not found to encourage it, this object of culture will probably soon be lost to this country, and we shall be wholly at the mercy of foreign dealers in this commodity, who sophisticate it with Safflower, Marygolds, &c.; whereas

ours comes out of the hands of the growers pure and genuine.

Saffron is set down as indigenous in some of our Floras ; but the indefatigable Ray affirms that nothing certain is known concerning its place of spontaneous growth ; and we have never found a wild plant of it in the country where it has been cultivated at least two centuries.



SPECIES.

2. *Crocus vernus*. *Spring Crocus*.

Lin. spec. 50. β . *Huds. angl.* 13. β . *Wither. arr.* 38. β .
Hall. helv. n. 1257. *Scop. carn. n.* 47. *Allion.*
pedem. n. 309. *Raii hist.* 1173.—1176. *Bauh.*
pin. 65, 66. 1—11 & 1—6. Figured in *Jacqu.*
austr. 5. *app. t.* 36. *Berg. phyt.* 2. 159. *Curtis,*
magaz. t. 45. *Blackw. t.* 144. *f.* 2. *Clus. hist.*
 1. 205. 2. *Ger. herb.* 125. 1. *emac.* 156. 12. &
 153. 1. *Park. parad.* 161—167. *t.* 163.

SPECIFIC CHARACTER.

Leaves broader, with flat edges; stigma very shortly trifid.

DESCRIPTION, &c.

SPRING CROCUS, in its wild state, is most commonly white, with a purple base, in Switzerland, according to Haller. Purple or white in Austria, according to Jacquin. Gesner gathered it with a yellow flower, on the mountains of Glarus. It is a native also of Carniola, Italy, Spain, &c. In England it is not properly indigenous, although Dr. Deering found it near Nottingham; and we observed it in considerable quantity, above forty years ago, in Battersea meadow, near the mill.

The varieties of Spring Crocus are very numerous. Parkinson has twenty-seven, all of which he has named and de-

scribed particularly. The most common now in our gardens are, the Scotch, beautifully striped; the Blue; the Blue-striped; White; Yellow of several shades, larger and smaller; Yellow, striped with black, and Cloth of Gold. New ones are constantly imported from Holland. We have preferred figuring the Blue, to show the difference between this and the true Saffron, which probably might yield as many varieties, if equal pains were bestowed on the cultivation of it; but the Spring Crocus is valuable on account of its early flowering; whereas Saffron blows late in Autumn.

We have separated the Vernal from the Autumnal Crocus, on the authority of Miller, Haller, and Jacquin.



COLCHICUM.

HEXANDRIA Trigynia.

GENERIC CHARACTER.

Cal. a spathe. *Cor.* six-parted, with a rooted tube.

Caps. three, connected, inflated.

SPECIES.

Colchicum autumnale. Common Meadow Saffron.

Lin. spec. 485. *mat. med.* 100. *Huds. angl.* 175. *With. arr.* 379. *Lightf.* 192. *Hall. helv. n.* 1255. *Scop. carn. n.* 448. *Pollich, pal. n.* 366. *Leers, herb. born. n.* 271. *Allion. pedem. n.* 433. *Krock. files. n.* 577. *Raii hist.* 1170. *Baub. pin.* 67. Figured in *Storck. monogr. Blackw. t.* 566. *Berg. phyt. t.* 177. *Plenck. ic. t.* 279. *Woodv. med. bot. t.* 177. *Baub. hist. 2.* 649. *Mor. hist. f. 4. t. 3. f. 1.* *Petiv. brit. t.* 67. *f. 2.* *Park. parad.* 153. *Ger. 127. f. 1, 2. emac.* 157. 1, 2.

SPECIFIC CHARACTER.

Leaves flat, lanceolate, erect.

DESCRIPTION.

THE bulb is about the size and shape of the Tulip, but not so sharp pointed, and the skin is of a darker colour.

The leaves appear in March ; they are commonly four, folded over each other below, but spread open above ground, and standing cross-ways ; they are of a deep green, five or six inches long, and one and a half broad*. With the other leaves one or two generally arise of the same length, but only one fourth of the width, which are a kind of bracteal leaves to the feed-bud. The feed-veffel, which comes out between the leaves in April, is sessile at their base, large, somewhat ovate, but with three very blunt angles†. The flowers come out in Autumn, with long slender tubes, about four inches high ; their number in proportion to the size of the roots, from 2 to 7 or 8.

OBSERVATIONS.

The seeds lye buried all Winter within the bulb, grow up in Spring, and are ripe about the time of hay harvest. From the appearance of the flowers in Autumn without leaves, the country people call them *Naked Ladies*. In a wild state they are commonly purple ; but there are many varieties of colour in the gardens. It is a native of most parts of Europe in pastures, and is not uncommon in England, particularly in the Western and Northern parts. It is found also in Scotland, but not common.

No cattle eat it. The roots have much acrimony, and are poisonous. Storck however, brought them into use as a medicine, and they are reputed to have much the same qualities as Squill.

* Miller. † Woodward M. S.



GLECHOMA.

DIDYNAMIA Gymnospermia.

GENERIC CHARACTER.

Calyx five-cleft. Each pair of *Antbers* converging in form of a cross.

SPECIES.

Glechoma hederacea. Ground Ivy.

Lin. spec. 807. *fl. suec. n.* 518. *Hudsf. angl.* 254.

Wither. arr. 603. *Curtis lond.* 2. 44. *Lightf. scot.* 307. *Woodv. med. bot.* 84. t. 28. *Pollich. pal. n.* 554. *Fl. dan. t.* 789. *Hall. helv. n.* 245. (Chamæclema) *Ger. herb.* 705. *emac.* 856. 1. *Park. theat.* 677. *Mor. hist. f.* 11. t. 21. f. 1. *Rivin. mon. t.* 67. 2. *Blackw. t.* 225.

DESCRIPTION.

ROOT perennial. Stems trailing, putting forth roots at the joints. Leaves kidney-shaped, crenate or scalloped about the edge. The flowering-stalks spring from the joints, are upright and hairy, from four to six inches high. The peduncles are short and branched, supporting from three to five blue flowers, the middle segment of the lower lip marked with purple spots, and hairy at the base. The stamens are frequently found imperfect, but when they are perfect, the

anthers, after bursting, form a cross, or the shape of the letter X.

OBSERVATIONS.

Ground Ivy is common under hedges, on banks, in woods, and sometimes in dry pastures; flowering in April, May, and June. Linneus affirms that it gradually expels plants which grow near it, and thus impoverishes pastures. He says that sheep eat it, that horses are not fond of it, and that kine, goats, and swine, refuse it; it is also reported to be injurious to horses, if they eat much of it. It seems rarely to be touched by any sort of cattle with us. The expressed juice, mixed with a little wine, and applied morning and evening, is said to destroy the white specks on horses' eyes. The leaves were formerly thrown into the vat with ale to clarify it, and to give it a flavour. This was called Gill-ale; but seems to have grown into disuse since the introduction of hops. In obstinate coughs it is still a favourite remedy with the common people, though the London College has discarded it. It is most usually taken in form of an infusion or tea, or the expressed juice with honey. The distilled water is certainly of no service.

An herb so common, and one in so much vulgar esteem, has, of course, many names; as Gill, Gill-creep-by-ground, Robin-run-in-the-hedge, Ale-hoof, Tun-hoof, Cat's-foot, and Hay-maids.



PRIMULA.

PENTANDRIA Monogynia.

GENERIC CHARACTER.

Several flowers in an umbellule, with a small involucre. Tube of the corolla cylindrical, with the mouth open. Capsule one-celled. Stigma globose.

OBSERVATIONS.

THE common Primrose* is universally known; and it is sufficiently distinguished in its wild state, by its toothed roots, its oblong wrinkled leaves unequally notched about the edge, and particularly by its having no proper stalk, but only a peduncle sustaining one flower, the corolla of which is large, salver-shaped, of a pale yellow or sulphur colour. Linneus asserts that it has a short scape, concealed under ground, but this seems very seldom to be the case. The variety which we have figured here, for we dare not in this variable genus denominate it a species, has this scape or common naked flower-stalk as distinct as in the Cowslip or Oxlip; it differs also from the common Primrose both in the number and colour of the flowers, but most remarkably in the extreme

* *Primula veris* γ. *Lin. spec.* 205.—*vulgaris.* *Huds. angl.* 83. *Sowerby Engl. bot.* 4.—*acaulis Jacq. misc.* 158. *Curtis lond. n.* 65. *Wither. arr.* 204.

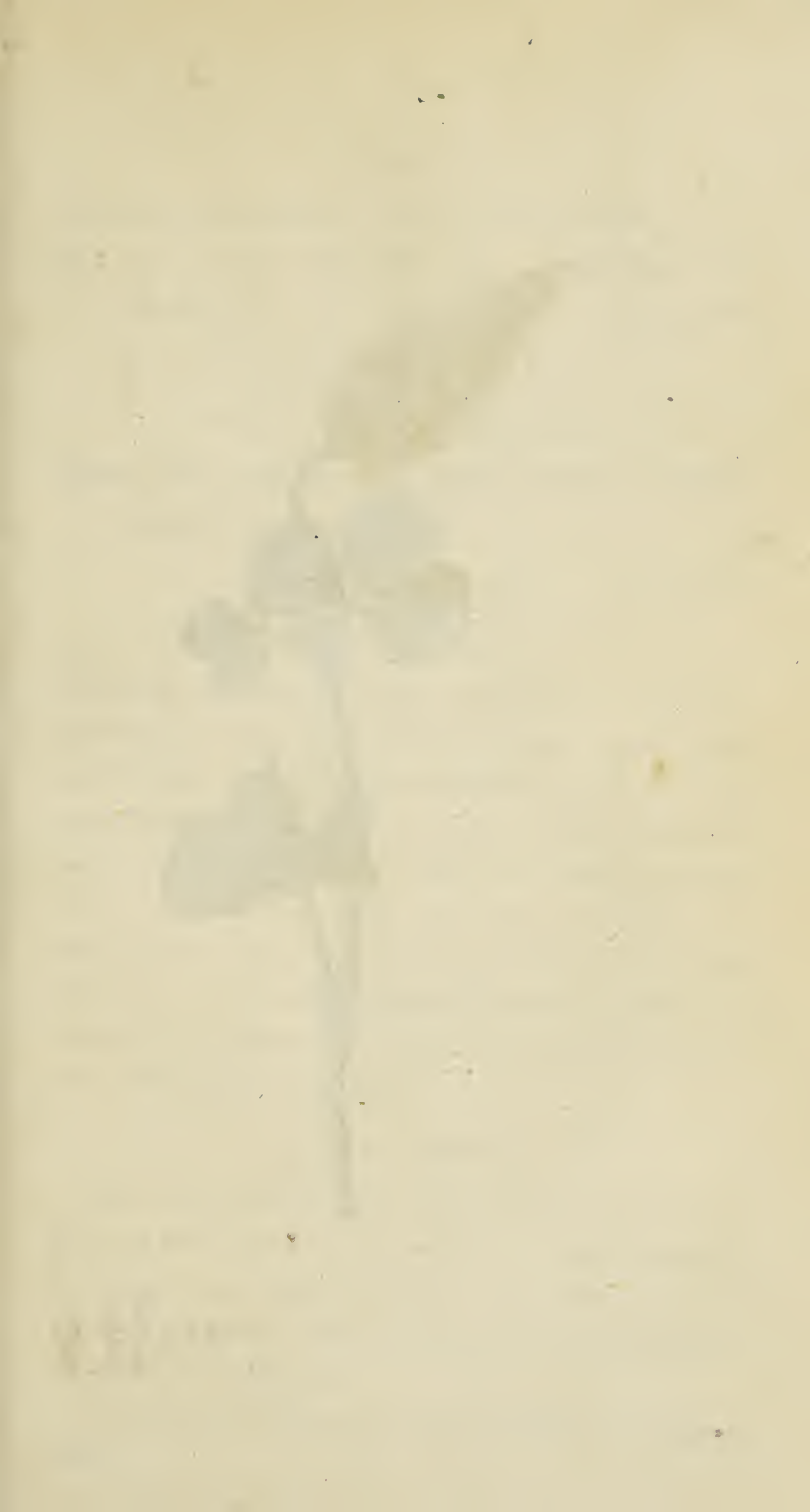
hairiness of the scape, peduncles, and calyx. The corolla is of a most beautiful purple colour, and deserves to be introduced among other ornamental vernal flowers. It is a native of Scotland ; and we owe our knowledge of it to the indefatigable researches and the benevolent communication of Mr. Dickson, whose skill in the Cryptogamia class stands at present unrivalled.

We are ready to confess that the Primrose and Cowslip are sufficiently and permanently distinct ; but yet we think that the chain of nature in the connection of species, which perhaps at some future time will be unveiled, may be more clearly discerned in this genus than in most others. The Oxlip seems to form an intermediate link between the Primrose and Cowslip ; and the plant which we have here figured may be considered as a link between the former of them and the Oxlip. But we have sometimes met with a Primrose in a wild state, pushing up a scape, which sustained several flowers, differing in no respect from the ordinary sort, except in this circumstance, and forming a more perceptible connection with the Oxlip. It is well known that the Primrose is the parent of the admired Polyanthus ; and the florists are well acquainted with the infinite variety of which this species and the still more highly admired Auricula are capable by culture.

If the Primrose be not of much use in rural œconomy, it does no injury to the cultivator. It occupies not the room of more useful plants, and it proclaims the approach of the chearful and prolific season. It may supply the place of Asarabacca as a sternutatory ; and a dram and half of the dried roots taken up in autumn will operate as a strong but safe emetic.

The common fort having been figured repeatedly, we have preferred giving this elegant variety, which has not before been presented to the public.

Mr. Curtis has figured the double Purple or Lilac Primrose in the 229th plate of his Botanical Magazine.



SPECIES.

Trifolium incarnatum. *Flesh-coloured Trefoil.*

Lin. spec. 1083. *Hall. helv.* 374. *Gouan illustr.* 51.

Bauh. hist. 2. 376. *Raii hist.* 948. 1. *Ger. emac.*

1192. f. 1. *Park. theat.* 1106. f. 1.

SPECIFIC CHARACTER.

Spikes of flowers villous, oblong, leafless; leaflets roundish, crenate.

DESCRIPTION.

STALKS from a foot to eighteen inches in height. Leaves, especially the lower ones, obcordate, from the base to the middle entire, and thence to the end finely notched; they are soft and pubescent, and the upper ones are less emarginate at top. The spike of flowers is ovate-oblong, soft and silky. The calyxes are hirsute, and there is but little inequality in the teeth. The corollas are red, and have long standards. Ray says that he observed it about Naples with beautiful red flowers almost scarlet; but that about Geneva they were of a pale flesh colour.

OBSERVATIONS.

This is an annual Trefoil, and flowers with us in July. Ray says that the seed is ripe, and falls in July and August, in Italy, where it grows naturally. It is also a native of the South of France. Haller reports that it has been looked for in vain near Geneva.

We do not know that it has been, or may be, cultivated to effect.



Peauu, Engraved & Published Aug^r 1793 by J. P. Aitken, 1st Peauu Street, Carlisle.

MELICA.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Cal. two-valved, two-flowered, with the rudiment of another between them.

SPECIES.

Melica uniflora. *Single-flowered Wood Melic-grass.*

Retz. obs. 1. p. 10. n. 9. Curtis lond. n. 51. Wither. arr. 81.

M. nutans. Hudf. angl. 37. Lightf. scot. 95.

Gramen avenaceum, &c. Bauh. pin. 10. 3. Lob. adv. alt. 465. Bauh. hist. 2. 434. Park. theat. 1151. 3. Mor. hist. f. 8. t. 7. f. 49. Raii syn. 403. 6. hist. 1289. n. 4.

SPECIFIC CHARACTER.

Panicle thin, calyxes two-flowered, one flower fertile, the other neuter.

DESCRIPTION.

ROOT perennial. Stem simple, a foot and half or more in height, slender, where it is covered with the sheaths of the leaves somewhat angular, rough and striated, at bot-

tom of a dull purple colour. Leaves one at each joint, about five in number, yellowish green, flat, near two lines in breadth, terminating gradually in a point; rough if drawn backwards between the fingers; somewhat hairy on the upper surface; the edges appearing finely ferrate when magnified; membrane or ligule scarcely any: an ovate acuminate leaflet, upright and coloured, rises from the fore part of the mouth of the sheath. The lower peduncles of the panicle come forth in pairs, one shorter than the other; the upper ones grow singly. Spikelets pedicelled, at first dark purple, awnless. Valves of the calyx coloured and shining; the outer ovate, concave, five-nerved, terminated by a short point; the inner less, ovate-lanceolate, three-nerved. Fertile flower sessile; the outer valve large, swelling out, with its edges embracing the inner one, which is flattish, the edges membranous and turned back, especially near the base; the neuter flower pedicelled. Nectary a very minute entire scale, at the base of the germ. Seed ovate, shining, rather large and blackish*.

OBSERVATIONS.

Retzius observes, that this species is often found with the *nutans*, and differs very much from it. In more than a thousand specimens that he examined, there was not one panicle truly simple, nor a single calyx that contained two perfect florets; and being cultivated in a garden three years, it remained unchanged.

Dr. Stokes remarks, that the habit of this is very different from that of the *nutans*; and that its bellying valves, the grizzly texture of its blossom, its ribbed calyx, and its habit,

combine to point out an affinity between these two species and the *Milium effusum*.

It is not uncommon in woods and hedges ; and flowers in May, or the beginning of June.

The delicacy and striking colour of the panicle, joined to its place of growth, readily distinguish this from all other English grasses*.

It is sufficiently apparent that the Melic-grasses can never be an object of culture for meadows or pastures.

* Curtis.



SPECIES.

Melica nutans. *Mountain Melic-grafs.*

Lin. spec. 98. *With. arr.* 82. *Leers herborn. n.* 63.
t. 3. *f.* 4. *Schreb. gram.* 62. *t.* 6. *f.* 1. (2 in the
 text.

M. montana. *Huds. angl.* 37.

Gr. mont. avenaceum, locustis rubris. *Bauh. pin.*
10. prodr. 20. *theat.* 155. *Raii hist.* 1289. *syn.*
 403. 7. *Scheuch. agr.* 171. *t.* 3. *f.* 16. D. E. F.
Gr. loc. rubris. *Bauh. hist.* 2. 434. 1. *Park. theat.*
 1151. 5.

SPECIFIC CHARACTER.

Petals beardless, panicle nodding, simple.

DESCRIPTION.

ROOT perennial, somewhat creeping. Stem from one to two feet in height, upright, compressed and four-cornered, having three or four knots on it; clothed at the base with alternate, sharp, brown, sheathing scales; then to above the middle with four-cornered rugged sheaths of leaves. Lower stem-leaves shorter, convex; upper slightly keeled, broadish, pubescent on the upper surface, rugged about the edges, and on a part of the keel. No proper ligule, but only a short membranaceous brown rim. Panicle pointing one way; either quite simple, resembling a raceme, with alternate flexuose pedicels, sustaining one or two pendant

flowers, or a little branched; one or two of the lower peduncles are longer, spreading, and support three or four flowers. Valves of the calyx shorter than the corolla, blunt, dusky purple, edged with white; the outer three-nerved, the inner five-nerved. Valves of the corolla oblong, between membranaceous and cartilaginous; outer scored with about seven lines, whitish or yellowish, sometimes tinged with purple; inner much shorter, pubescent. Nectary one-leaved, horizontal, orbicular, flat, hollowed out for the insertion of the germ. Seed brown*.

OBSERVATIONS.

This grass grows in the mountainous woods of our Northern counties; and flowers in June and July.

Mr. Pennant, in his Tour to Scotland, informs us, that in the Isle of Raza, they make it into ropes for fishing nets, which last long without rotting.

* Leers & St. in With.



1. *Plantaginifolia* L. *Plantaginifolia* L. *Plantaginifolia* L. *Plantaginifolia* L. *Plantaginifolia* L.

VERONICA.

DIANDRIA Monogynia.

GENERIC CHARACTER.

Border of the corolla divided into four parts, of which the lowest is narrower than the rest. Capsule two-celled.

SPECIES.

Veronica Chamædrys. *Wild Germander, or Germander Speedwell.*

Lin. spec. 17. *Huds. angl.* 6. *Wither. arr.* 13. *Curtis lond.* 1. 2. *Hall. helv. n.* 536. *Pollich. pal. n.* 16. *Leers herborn. n.* 14. *Krock. files. n.* 24. *Fl. dan. t.* 448. *Rivin. mon. t.* 94.

Chamædrys spuria, &c. *Bauh. pin.* 249. 15. *Bauh. hist.* 3. 286. 1. *Park. theat.* 107.

Ch. sylvestris. *Ger.* 530. 4. *emac.* 657. 3. *Raii hist.* 850. 3. *syn.* 281.

SPECIFIC CHARACTER.

Racemes lateral, leaves ovate, sessile, wrinkled, toothed; stems feeble, hairy on each side.

DESCRIPTION.

ROOT perennial, creeping. Stalks spreading, round, hard, ciliate with long white hairs, very thick set together, on opposite sides, branched. Leaves cordate-ovate, opposite, jaggedly toothed, sometimes very deeply, more or less hirsute, strongly veined; the lower ones smaller than the upper ones. Flowers as many as twenty in long upright racemes, opposite or single; they are on pedicels, each supported by a lanceolate bract. Segments of the calyx four, lanceolate, unequal, hairy; these hairs, when magnified, appear terminated by minute globules. Corolla bright blue, streaked with veins of a deeper colour; the throat of this is white, as are also the base and point of the filaments, the pollen, and the base of the style; the stigma is reddish; the germ is woolly, flattish, and surrounded by a nectariferous gland at the base. Capsule exactly obcordate, a little shorter than the calyx, light brown, and slightly hairy at the edge. Seeds flat, of a yellowish brown colour*.

OBSERVATIONS.

Wild Germander is common under hedges, among bushes, in orchards, &c. It flowers in May and June, frequently in April. Many plants with less beauty than this are cultivated in our gardens. Mr. Curtis remarks, that, when growing wild, the leaves are usually sessile; but when cultivated, these become larger, and placed on footstalks of a moderate length; thus approaching to *V. montana*, which it much resembles. At the end of summer a white

* Curtis, Withering, Leers.

hairy knob is frequent on this plant ; it is the nest of some insect.

This pretty plant is neither very useful nor injurious to the husbandman. The leaves, according to Dr. Withering, are a better substitute for tea than those of *V. officinalis*, being more grateful and less astringent.





PLANTAGO.

TETRANDRIA Monogynia.

GENERIC CHARACTER.

Cal. four-cleft. *Cor.* four-cleft, with a reflex border. *Stam.* very long. *Caps.* two-celled, opening horizontally.

SPECIES.

Plantago lanceolata. Ribwort plantain.

Lin. spec. 164. *Huds. angl.* 64. *Wither. arr.* 143. Figured in *Curtis lond.* 2. 10. *Fl. dan. t.* 437. *Blackw. herb. t.* 14. *Ger. herb.* 341. 1. *emac.* 422. 1. *Park. theat.* 496. 1. *Mor. hist. f.* 8. *t.* 15. *f.* 9. *Petiv. brit. t.* 4. *f.* 6. *Baub. hist.* 3. 505. 1. *Anderson's essays,* 2. *p.* 252. *t.* 15. — Described by *Haller helv. n.* 656. *Pollich. pal. n.* 161. *Leers, herborn. n.* 108. *Krock. files. n.* 234. *Ray hist.* 877. 7. *Curtis, &c.*

SPECIFIC CHARACTER.

Leaves lanceolate; spike nearly ovate, naked; scape (naked stalk) angular.

DESCRIPTION.

ROOT perennial, when old appearing as if bitten off at the end. Leaves only next the root, distinguished by their five prominent ribs. Scape or flowering-stalk longer than the leaves, single, upright, angular, grooved, and slightly twisted; having one spike at top, of a blackish colour before the flowers open. This contains many (130) small flowers, crowded close together, with an ovate pointed bracte at the base of each. The capsule contains two oblong shining seeds, of an amber colour, in each cell.

OBSERVATIONS.

Nothing is more common than this Plantain in dry pastures, where it is usually left untouched by cattle; to feed small birds by the copious produce of its seeds; the leaves spread on the ground, but in thick grasses they are drawn up to a considerable length, and become more succulent. It was formerly considered merely as a weed, occupying the room of grasses and other useful herbs; but it has lately been introduced into culture, under the name of *Rib-grass*, and is much recommended in common with other novelties, probably much above its deserts. In truth, we have no very high opinion of it, in comparison with grasses properly so called, and many leguminous plants. Haller, indeed, attributes, but we think without reason, the richness of the milk in the alpine dairies to this plant, and to *Alchemilla vulgaris*. Mr. Dickenson relates, that twelve acres being sown with it, a plentiful crop was produced, but no animal would eat it*.

We must refer those who have a partiality for this herb as a food for cattle, to Mr. Young's annals, vol. 6. p. 50. &c. and to Dr. Anderson's essays, vol. 2. p. 253.

* Withering arr. 144.



FUMARIA.

DIADELPHIA Hexandria.

GENERIC CHARACTER.

Cal. two-leaved. *Cor.* ringent. *Filaments* two, membranaceous, with three anthers on each.

SPECIES.

Fumaria officinalis. Common Fumitory.

Lin. spec. 984. *Huds. angl.* 309. *Wither. arr.* 751. Figured in *Curtis lond.* 2. 52. *Woodv. med. bot.* 241. t. 88. *Blackw. t.* 237. *Mill. fig. t.* 136. f. 2. *Rivin. tetr. t.* 1. *Bauh. hist.* 3. 201. *Ger. herb.* 927. 1. *emac.* 1088. 1. *Park. theat.* 287. 1. *Mor. hist. f.* 3. t. 12. f. 9.—Described by *Haller helv. n.* 346. *Pollich pal. n.* 663. *Krock. files. n.* 1139. *Ray hist.* 405. *Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Seed-vessels in racemes, each with a single seed; stem diffused.

DESCRIPTION.

ROOT annual. Stems from a span to a cubit in height, smooth, angular, tender, bending, branched. Leaves alter-

nate, petioled, bluish green, smooth, somewhat fleshy, decomposed, the last division bifid or trifid, the extreme segments lanceolate. Flowers alternate, in long bunches, on very short pedicels; under each is a lanceolate membranaceous bracte. Corolla reddish, tipped with deep purple; sometimes pale purple or white. Seed-vessel roundish, slightly obcordate, smooth.

OBSERVATIONS.

Fumitory is a common weed in corn fields and gardens, and on ditch banks; flowering from April to August, and even later. Kine and sheep are said to eat it; to the latter it is accounted even salubrious. The leaves are succulent, saline, and bitter. The juice is accounted a great purifier of the blood, and is said to have had good effects in cutaneous disorders approaching to leprosy.



POTERIUM.

MONOECIA Polyandria.

GENERIC CHARACTER.

MALE. *Cal.* four-leaved. *Cor.* four-parted. *Stam.*
30—40.

FEM. *Cal.* four-leaved. *Cor.* four-parted. *Pist.* 2.
Berry formed of the tube of the corolla hardened.

SPECIES.

Poterium Sanguisorba. Common Burnet.

Lin. spec. 1411. *Huds. angl.* 421. *With. arr.* 1081.
Figured in *Curtis lond.* 2. 64. *Blackw. herb.* 413.
Mor. hist. f. 8. *t.* 18. *f.* 12. *Petiv. brit. t.* 4. *f.*
12. *Ger. herb.* 889. 1. *emac.* 1045. 1. *Park.*
theat. 582. 1.—Described by *Haller helv. n.* 706.
(*Pimpinella*) *Pollich. pal. n.* 908. *Bauh. hist.* 3.
116. *Ray hist.* 401. (*Pimpinella*) *Curtis, With-*
ering, &c.

SPECIFIC CHARACTER.

Unarmed, or without thorns or prickles; stems
somewhat angular.

DESCRIPTION.

ROOT perennial. Stems nearly upright, from nine inches to a foot in height, branched, streaked, reddish, smooth, except at bottom, where it is slightly hairy. Leaves alternate, pinnate. Leaflets smooth, bluish underneath, with the midrib slightly hairy, deeply serrate about the edge; on the lower leaves they are roundish, and on the upper ones ovate and pointed; the lower leaflets on the same leaf are commonly alternate, and the upper ones opposite. The petiole or leaf-stalk is three-cornered, channelled, hairy and somewhat membranaceous at the base. Flowers in little roundish heads, the terminating one largest; male or barren flowers below; female or fertile flowers above, in the same head, expanding before the others, which are frequently imperfect hermaphrodites. The filaments are very long, and commonly red. The stigma is very red. Seed-vessel a juiceless berry, having four wrinkled sides, and containing two pale-brown seeds*.

OBSERVATIONS.

Burnet is common in high pastures, on a calcareous soil. It flowers the beginning of May, and sometimes in April. The leaves, when bruised, smell like cucumber, and taste something like the paring of that fruit; they are sometimes put into salads and cool tankards. Some years since Mr. Rocque attempted to introduce it as food for cattle. It has only one good quality, which is, that it continues green all winter, and affords some food early in spring, when it is commonly most wanted. But cattle are not very fond of it, nor does it yield a sufficient burden to pay the farmer for the expence of cultivating it.

* Curtis lond. & Stokes.

We refer such of our readers as desire to be acquainted with the culture and merits of Burnet, to the Museum rusticum, to the Bath memoirs, Young's annals, Anderson's essays, and Mr. Rocque's pamphlet.

There is a larger coarser sort of Burnet, (*Sanguisorba officinalis*) which, to a common eye, is very like this, except in size; but the stems of common or lesser Burnet are usually declining; the lower leaflets rounder; the heads sometimes purplish when in fruit, but never of so deep a tinge, nor shining, as in the great Burnet, which grows in moist meadows, and has only hermaphrodite flowers.

The Burnets and Burnet-Saxifrages having both had the name of *Pimpinella*, some confusion has hence arisen, which Dr. Anderson has continued, by calling Burnet *Pimpinella sylvestris*, which is the name of the great Burnet, and not of the smaller cultivated sort in Gerard's herbal.





SINAPIS.

TETRADYNAMIA *Siliquosa.*

SPECIES.

Sinapis alba. *White Mustard.*

Lin. spec. 933. *Huds. angl.* 298. *Wither. arr.* 713.

Figured in *Curtis lond.* 5. 46. *Black. t.* 29.

Ger. emac. 244. 4. *Petiv. brit.* 45. 10. *Baub.*

hist. 2. 856.—Described by *Hall. helv. n.* 466.

Krock. files. n. 1101. *Lightf. scot.* 361. *Ray*

hist. 802. 2. *Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Siliques or pods hispid or rough with hair, with a very long oblique swordshaped beak at the end.

DESCRIPTION.

ROOT annual. Stem strong, nearly round, upright, branched, striated or finely grooved, set with numerous stiff hairs pointing downwards, from a foot and a half to two feet in height. Leaves petioled, alternate, pale green, rough with strong hairs on both sides, all deeply indented or lobed, the terminating segment very broad and large; and frequently a pair of small wings on the petiole. The flowers are on loose

racemes or bunches at the ends of the branches, on horizontal peduncles, which have four grooves or corners, and strong hairs pointing downwards. The leaflets of the calyx spread a little at top, are yellow or sometimes purplish, and end bluntly. Petals yellow, with upright narrow claws scarcely the length of the calyx, and an inversely ovate entire border. Pods hairy, somewhat jointed, terminated by a dark green striated beak, having a few hairs on it, and knobs or protuberances where the seeds are. Seeds 3 or 4, white, yellowish, or brownish.

Ray distinguishes this species from Common Mustard* and Charlock, by the leaves being more deeply and frequently jagged or cut, the pods hairy and standing out more from the stalk; the seeds very large, so as to swell out the pod into knots; and the pod itself finishing in a broad, thin, oblong, sword-shaped point†. Haller remarks that the flower is larger than in the Common Mustard.

OBSERVATIONS.

White Mustard grows wild in corn fields, on banks, and by road sides, flowering in June, and ripening its seeds in August. Mr. Curtis observes, that it is as common in the fields about High Wycomb in Bucks, as Charlock (*Sinapis arvensis*) is in other places. We may add, that *Raphanus Raphanistrum*, figured in the next plate, is no less common in some corn fields, and that they are all frequently confounded under the name of Charlock.

White Mustard is generally cultivated in gardens as a salad herb, with cresses, radish, &c. for winter and spring use. The seeds have nearly the same properties with those of Common Mustard (*Sinapis nigra*).

* Figured in plate 51. † Syn. 295.



RAPHANUS.

TETRADYNAMIA Siliquosa.

GENERIC CHARACTER.

Calyx closed. *Silique* or pod protuberant, mostly jointed, columnar. *Glands* two between the shorter stamens and the pistil, and as many between the longer stamens and the calyx.

SPECIES.

Raphanus Raphanistrum. *Corn*, or *Wild Radish*.

Lin. spec. 935. *Fl. suec. n.* 612. *Huds. angl.* 289.

Wither. arr. 715. *Lightf. scot.* 362.—Figured

in *Curtis lond.* 4. 46. *Fl. dan. t.* 678. *Baub.*

hist. 2. 851. 1. *Ger. herb.* 179. 2. & 199. *emac.*

240. 1. *Park. theat.* 863. 4, 5. *Petiv. brit. t.*

46. f. 10. *Mor. hist. f.* 3. t. 13. f. 1, 2. & row

2. 4. f. 4.—Described by *Haller helv. n.* 468.

Pollich palat. n. 644. *Krock. files n.* 1104. *Ray*

hist. 805. 2. *Curtis*, *Withering*, &c.

SPECIFIC CHARACTER.

Siliques or pods columnar, jointed, smooth, one-celled.

DESCRIPTION.

ROOT annual. Stem from a foot to a foot and a half in height, upright, branched, rough with transparent hairs pointing backwards, often purple at bottom. Leaves petioled, pinnatifid, rough; the lowermost consisting of four or five pairs of pinnas, the uppermost of two or three; all obtusely ferrate or toothed; the teeth purple at the tips. Flowers peduncled, in a loose raceme. Calyx upright, set with white hairs. Corolla varying much in colour, yellow, white, or purplish; but always with dark veins: petals inversely heart-shaped, entire, spreading; the claws a little longer than the calyx. Pods round, composed of from 3 to 6, grooved, one-celled joints, containing a single seed; ending in a linear, flat, smooth beak. Seeds roundish, ferruginous, very smooth, the size of common garden Radish. It is observed by Haller and others, that the pod has at first two cells, but from one of the seeds being always abortive, and the other filling the joint of the pod, it appears to have only one cell.

The whole plant is generally glaucous, or of a sea-green colour, and all covered with hairs, except the pods. It differs from garden Radish in having narrower pods, with the articulations more distinct. *Sinapsis arvensis* or Charlock is usually one third taller than this; the stalks, which in that are finely grooved, hirsute, and commonly of a deep red colour, are in this smooth, yet hispid, and usually glaucous; Charlock has often an unbranched stem, whereas this is more frequently branched quite down to the bottom; the calyx is upright and close in this, but in that it is spreading; the corolla also of Charlock is smaller, and always yellow*.

* Curtis lond.

Wild Radish is too abundant among spring corn in many places ; flowering from June to August.

Linneus informs us, that in wet seasons it abounds among barley, in Sweden ; and that being ground with the corn, the common people, who eat barley bread, are afflicted with violent convulsive complaints*. Monf. Villars, however, remarks, that this weed is so common in some of the cold moist vallies of Dauphiné, that it must needs make great ravages, if it were as dangerous as Linneus has represented it ; and yet this spasmodic disease is unknown there †.

* Amæn. acad. 6. 430. † Histoire des plantes de Dauphiné.



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TRIFOLIUM.

 DIADELPHIA Decandria.

SPECIES.

Trifolium Melilotus officinalis. Common Melilot
Trefoil.

Lin. spec. 1078. *Fl. suec. n.* 663. *Huds. angl.* 323.
Wither. arr. 790. *Lightf. scot.* 402.—Figured
in *Gmel. sib.* 4. *t.* 7. *Riv. tetr. t.* 6. *Blackw.*
herb. t. 80. *Baub. hist.* 2. 370. *Ger. herb.* 1034.
3, 4. *emac.* 1205. 4. *Park. theat.* 719. 1, 2.
Mor. hist. f. 2. *t.* 16. *f.* 2. *row* 2.—Described
by *Haller helv. n.* 362. *Scop. carn. n.* 935.
Pollich pal. n. 697. *Krock. files. n.* 1198. *Vil-*
lars dauph. 476. *Ray hist.* 951. 2.

SPECIFIC CHARACTER.

Legumes or pods in racemes, naked, wrinkled,
acute, having two seeds in each; stem up-
right.

DESCRIPTION.

ROOT annual, strong, and woody. Stem striated and
somewhat angular, yellowish green, two or three feet high,

with spreading, alternate branches. Leaves ternate, petioled, alternate; lower leaflets oblong wedge-shaped, upper elliptical; they vary much in form, and are commonly serrate or toothed about the edge, but sometimes nearly entire. The flowers also vary in colour, but with us are almost always yellow. They grow in long reflex bunches or spikes, on short capillary pedicels, without any regular order; and have each a small awl-shaped bracte. Calyx one third of the length of the corolla, divided half way down into five, nearly equal, acute teeth. Pod very short, turgid, wrinkled transversely, pendulous, containing 1 or 2 yellowish, roundish, smooth seeds.

OBSERVATIONS.

Melilot grows wild in corn fields, pastures, and by waysides. Mr. Miller marks Cambridgeshire, and Gerard Essex, for abundance of it. There cannot be a worse weed among bread-corn, for a few of the seeds ground with it spoil the flour, by communicating their peculiarly strong taste. It flowers in June and July, and the seeds ripen with the corn.

The whole plant has a peculiar scent, which becomes stronger when it is dry. The flowers are sweet; a water distilled from them, though it has little odour in itself, improves the flavour of other substances. In medicine it was esteemed emollient and digestive, and was used in fomentations and cataplasms, particularly in blister-plasters; but it is now laid aside, as being rather acrid and irritating than emollient.

Notwithstanding its strong smell and bitter acrid taste, it does not appear to be disagreeable to any cattle, and horses

are said to be extremely fond of it. Hence it is called by some Italian writers *Trifolium caballinum*.

Mr. Ray affirms, that it is sometimes sown in England for the food of kine and horses. We do not know that it is now ever cultivated among us. Bees are very fond of the flowers.

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